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NEWS	1		Web Page for STN Seminar Schedule - N. America
NEWS	2	AUG 06	CAS REGISTRY enhanced with new experimental property tags
NEWS	3	AUG 06	FSTA enhanced with new thesaurus edition
NEWS	4	AUG 13	CA/CAPplus enhanced with additional kind codes for granted patents
NEWS	5	AUG 20	CA/CAPplus enhanced with CAS indexing in pre-1907 records
NEWS	6	AUG 27	Full-text patent databases enhanced with predefined patent family display formats from INPADOCDB
NEWS	7	AUG 27	USPATOLD now available on STN
NEWS	8	AUG 28	CAS REGISTRY enhanced with additional experimental spectral property data
NEWS	9	SEP 07	STN AnaVist, Version 2.0, now available with Derwent World Patents Index
NEWS	10	SEP 13	FORIS renamed to SOFIS
NEWS	11	SEP 13	INPADOCDB enhanced with monthly SDI frequency
NEWS	12	SEP 17	CA/CAPplus enhanced with printed CA page images from 1967-1998
NEWS	13	SEP 17	CAPplus coverage extended to include traditional medicine patents
NEWS	14	SEP 24	EMBASE, EMBAL, and LEMBASE reloaded with enhancements
NEWS	15	OCT 02	CA/CAPplus enhanced with pre-1907 records from Chemisches Zentralblatt
NEWS	16	OCT 19	BEILSTEIN updated with new compounds
NEWS	17	NOV 15	Derwent Indian patent publication number format enhanced
NEWS	18	NOV 19	WPIX enhanced with XML display format
NEWS	19	NOV 30	ICSD reloaded with enhancements
NEWS	20	DEC 04	LINPADOCDB now available on STN
NEWS	21	DEC 14	BEILSTEIN pricing structure to change
NEWS	22	DEC 17	USPATOLD added to additional database clusters
NEWS	23	DEC 17	IMSDRUGCONF removed from database clusters and STN
NEWS	24	DEC 17	DGENE now includes more than 10 million sequences
NEWS	25	DEC 17	TOXCENTER enhanced with 2008 MeSH vocabulary in MEDLINE segment
NEWS	26	DEC 17	MEDLINE and LMEDLINE updated with 2008 MeSH vocabulary
NEWS	27	DEC 17	CA/CAPplus enhanced with new custom IPC display formats
NEWS	28	DEC 17	STN Viewer enhanced with full-text patent content from USPATOLD
NEWS EXPRESS	19	SEPTEMBER 2007:	CURRENT WINDOWS VERSION IS V8.2, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 19 SEPTEMBER 2007.
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NEWS LOGIN			Welcome Banner and News Items
NEWS IPC8			For general information regarding STN implementation of IPC 8

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=> file reg

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STRUCTURE FILE UPDATES: 1 JAN 2008 HIGHEST RN 959833-82-0

DICTIONARY FILE UPDATES: 1 JAN 2008 HIGHEST RN 959833-82-0

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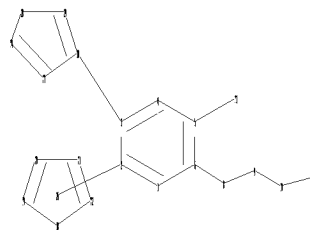
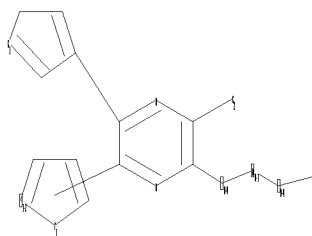
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<http://www.cas.org/support/stngen/stndoc/properties.html>

=>

Uploading C:\Program Files\Stnexp\Queries\10561033.str



```

chain nodes :
8 9 10 11 33
ring nodes :
1 2 3 4 5 6 18 19 20 21 22 27 28 29 30 34
chain bonds :
3-30 5-33 6-8 8-9 9-10 10-11
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 18-19 18-22 19-20 20-21 21-22 27-30 27-34
28-29 28-34 29-30
exact/norm bonds :
3-30 5-33 6-8 8-9 9-10 10-11 18-19 18-22 19-20 27-30 27-34 28-29 28-34
29-30
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6 20-21 21-22
isolated ring systems :
containing 1 :

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G1:C,S,N

G2:C,O

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Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 8:CLASS 9:CLASS 10:CLASS
11:CLASS 18:Atom 19:Atom 20:Atom 21:Atom 22:Atom 26:Atom 27:Atom 28:Atom
29:Atom 30:Atom 33:CLASS 34:Atom

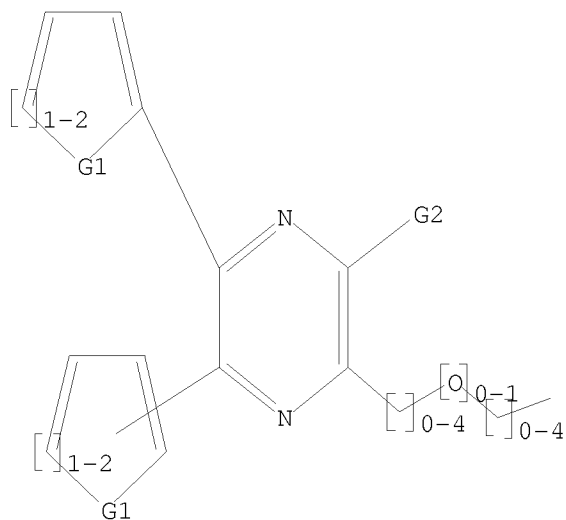
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L1 STRUCTURE UPLOADED

=> d 11

L1 HAS NO ANSWERS

L1 STR



G1 C,S,N

G2 C,O

Structure attributes must be viewed using STN Express query preparation.

=> s l1

SAMPLE SEARCH INITIATED 13:12:40 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED - 1635 TO ITERATE

100.0% PROCESSED 1635 ITERATIONS

23 ANSWERS

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**

BATCH **COMPLETE**

PROJECTED ITERATIONS: 30275 TO 35125

PROJECTED ANSWERS: 173 TO 747

L2 23 SEA SSS SAM L1

=> s l1 sss full

FULL SEARCH INITIATED 13:12:46 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 33092 TO ITERATE

100.0% PROCESSED 33092 ITERATIONS

410 ANSWERS

SEARCH TIME: 00.00.01

L3 410 SEA SSS FUL L1

=> file caplus

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

178.36

178.57

FILE 'CAPLUS' ENTERED AT 13:12:53 ON 02 JAN 2008

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FILE LAST UPDATED: 1 Jan 2008 (20080101/ED)

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=> s 13

L4 145 L3

=> d 1-145 ibib abs hitstr

L4 ANSWER 1 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2007:922054 CAPLUS

DOCUMENT NUMBER: 147:448559

TITLE: Porphyrin, phthalocyanine and porphyrazine derivatives with multifuorenyl substituents as efficient deep-red emitters

AUTHOR(S): Barker, Carl A.; Zeng, Xianshun; Bettington, Sylvia; Batsanov, Andrei S.; Bryce, Martin R.; Beeby, Andrew

CORPORATE SOURCE: Department of Chemistry, Durham University, Durham, DH1 3LE, UK

SOURCE: Chemistry--A European Journal (2007), 13(23), 6710-6717, S6710/1-S6710/14

CODEN: CEUJED; ISSN: 0947-6539

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 147:448559

AB The synthesis and photophys. properties are described for a series of porphyrin, phthalocyanine and pyrazinoporphyrazine derivs. which bear four or eight peripheral fluorenyl substituents as antennae. Representative examples are 5,10,15,20-tetra(9,9-dihexyl-9H-fluoren-2-yl)porphyrin, 5,10,15,20-tetrakis[4-(9,9-dihexyl-9H-fluoren-2-yl)phenyl]porphyrin (I), 2,3,9,10,16,17,23,24-octakis(9,9-dihexyl-9H-fluoren-2-yl)-29H,31H-phthalocyanine (II) and 2,3,9,10,16,17,23,24-octakis[4-(9,9-dihexyl-9H-fluoren-2-yl)phenyl]-29H,31H-tetra-pyrazinoporphyrazine (III). Palladium-mediated Suzuki-Miyaura cross-coupling reactions have been key steps for attaching the substituents. The compds. are deep-red emitters: $\lambda_{\text{max}}(\text{em}) = 659$ (I), 737 (II) and 684 nm (III). Their absorption and emission spectra, their fluorescence lifetimes and quantum yields are correlated with the structures of the macrocycles and the substituents. The solution fluorescence quantum yields of porphyrin derivs. substituted with fluorene and terphenyl substituents ($\Phi_f = 0.21$ -0.23) are approx. twice that of tetraphenylporphyrin. For phthalocyanine derivative II, Φ_f was very high (0.88). Specific excitation of the fluorene units of II produced emission from both of them ($\lambda_{\text{max}} = 480$ nm) and also from the phthalocyanine core ($\lambda_{\text{max}} = 750$ nm), indicating a competitive rate of energy transfer and radiative decay of the fluorenes. Organic light-emitting devices (OLEDs) were made by spin-coating techniques by using a poly-spirobifluorene (PSBF) copolymer as the host blended with I

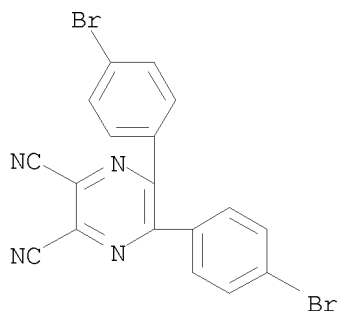
(5 weight%) in the configuration ITO/PEDOT:PSS/PSBF copolymer:3/Ca/Al. Deep-red emission ($\lambda_{\text{max}} = 663 \text{ nm}$; CIE coordinates $x = 0.70$, $y = 0.27$) was observed with an external quantum efficiency of 2.5% (photons/electron) (at 7.5 mA cm^{-2}), a low turn-on voltage and high emission intensity (luminance) of 5500 cd m^{-2} (at 250 mA/m^2).

IT 101579-12-8P

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(mol. and crystal structure; preparation and photophys. properties of porphyrin, phthalocyanine and porphyrazine derivs. with multifluorenyl substituents)

RN 101579-12-8 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-bromophenyl)- (CA INDEX NAME)

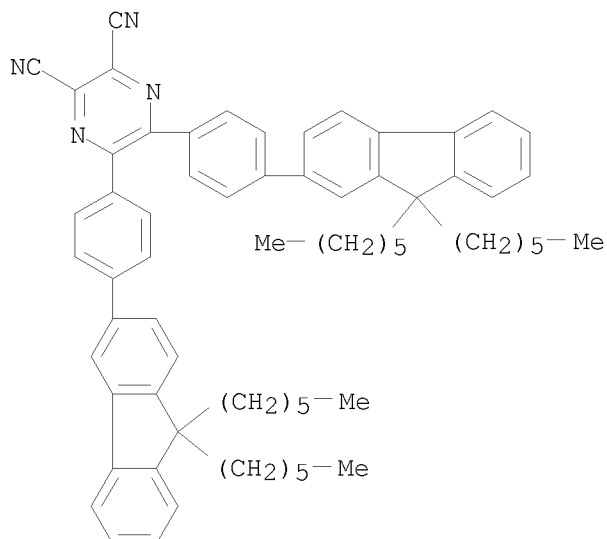


IT 952155-37-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and photophys. properties of porphyrin, phthalocyanine and porphyrazine derivs. with multifluorenyl substituents)

RN 952155-37-2 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[4-(9,9-dihexyl-9H-fluoren-2-yl)phenyl]-6-[4-(9,9-dihexyl-9H-fluoren-3-yl)phenyl]- (CA INDEX NAME)



REFERENCE COUNT:

10

THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 2 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2007:835096 CAPLUS
DOCUMENT NUMBER: 147:287894
TITLE: Preparation and application of dendritic compounds
INVENTOR(S): Yu, Gui; Xu, Xinjun; Chen, Shiyang; Liu, Yunqi; Di, Zhongang; Qiu, Wenfeng; Zhu, Daoben
PATENT ASSIGNEE(S): Institute of Chemistry, Chinese Academy of Sciences, Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 19pp. CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 101003516	A	20070725	CN 2006-10011225	20060118

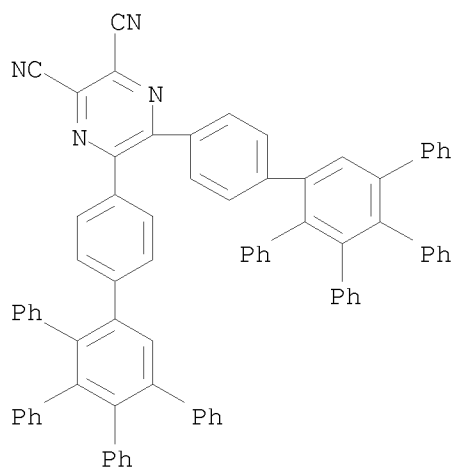
PRIORITY APPLN. INFO.: CN 2006-10011225 20060118

AB The title dendritic compds. are prepared by: (1) two-step reacting between 4,4'-dibromo di-Ph ethanedione and tri-Me silico acetylene, (2) reacting with tetra-Ph cyclopentanone, and (3) reacting with 1,2-diamino-4,5-dicyanobenzene, 1,2-diamino-4,5-dimethylbenzene and 2,3-diaminobutanedinitrile, resp. The obtained compds. are shown in formulas 1, 2 and 3. In formula 1, the compound is 6,7-dicyano-2,3-di-[4-(2,3,4,5-tetraphenyl)phenyl]-phenylquinoxaline. In formula 2, the compound is 6,7-dimethyl-2,3-[4-(2,3,4,5-tetraphenyl)phenyl]-phenylquinoxaline. In formula 3, the compound is 2,3-dicyano-5,6-di-[4-(2,3,4,5-tetraphenyl)phenyl]-phenylpyrazine. The compds. can be used for preparing OLED with high luminescent brightness and efficiency.

IT 943996-10-9P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(preparation and application of dendritic compds.)

RN 943996-10-9 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(3',4',5'-triphenyl[1,1':2',1''-terphenyl]-4-yl)- (CA INDEX NAME)



L4 ANSWER 3 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2007:833098 CAPLUS
DOCUMENT NUMBER: 147:265422
TITLE: Method for fabricating interface-type or mixed-type

organic light-emitting diode with adjustable luminous color

INVENTOR(S): Yu, Gui; Xu, Xinjun; Chen, Shiyang; Liu, Yunyin; Di, Zhongang; Zhu, Daoben

PATENT ASSIGNEE(S): Institute of Chemistry, Chinese Academy of Sciences, Peop. Rep. China

SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 35pp. CODEN: CNXXEV

DOCUMENT TYPE: Patent

LANGUAGE: Chinese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 101005122	A	20070725	CN 2006-10011227	20060118

PRIORITY APPLN. INFO.: CN 2006-10011227 20060118

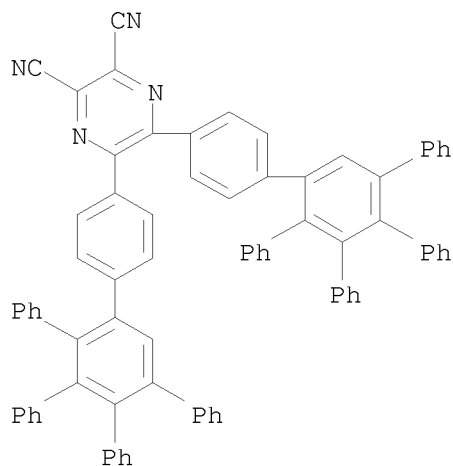
AB The title method for interface-type organic light-emitting diode (OLED) entails: (1) vacuum-depositing or spin-coating hole transport material on indium tin oxide (ITO) substrate to form a thin film of hole transport layer, (2) vacuum-depositing electron transport material to form a thin film of electron transport layer, and (3) vacuum-depositing cathodic layer containing Li, Ca, Ba, Mg, Ag, Al, or their alloy. The method for mixed-type OLED is characterized by vacuum-depositing or spin-coating hole transport material and electron transport material together to form a mixed layer. The fabricated OLED can emit lights with different colors.

IT 943996-10-9

RL: TEM (Technical or engineered material use); USES (Uses)
(method for fabricating interface-type or mixed-type organic light-emitting diode with adjustable luminous color)

RN 943996-10-9 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(3',4',5'-triphenyl[1,1':2',1''-terphenyl]-4-yl)- (CA INDEX NAME)



L4 ANSWER 4 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2007:570687 CAPLUS

DOCUMENT NUMBER: 147:176539

TITLE: High-efficiency blue light-emitting diodes based on a polyphenylphenyl compound with strong electron-accepting groups

AUTHOR(S): Xu, Xinjun; Chen, Shiyang; Yu, Gui; Di, Chong'an; You, Han; Ma, Dongge; Liu, Yunqi

CORPORATE SOURCE: Beijing National Laboratory for Molecular Sciences Key Laboratory of Organic Solids Institute of Chemistry, Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China

SOURCE: Advanced Materials (Weinheim, Germany) (2007), 19(9), 1281-1285
CODEN: ADVMEW; ISSN: 0935-9648

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

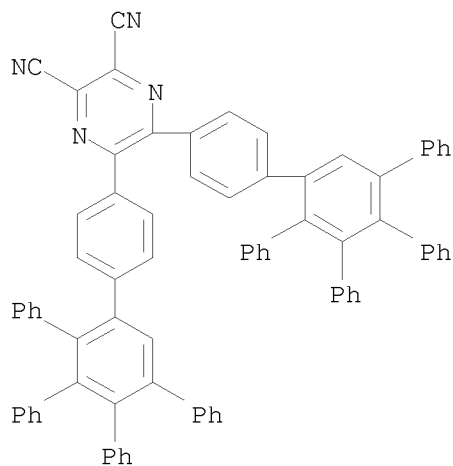
LANGUAGE: English

AB The synthesis and characterization of 2 new polyphenylphenyl compds. is reported. One compound (CPP) acts as a blue light-emitting material, but contains strong electron-accepting groups that form exciplexes with electron-donating arylamines that are widely used as hole-transporting materials. Inserting a layer of the other compound into the organic light-emitting diodes (see figure) suppresses the formation of exciplexes, and gives high-efficiency blue-light emission from the CPP layer.

IT 943996-10-9, 2,3-Dicyano-5,6-di(4-(2,3,4,5-tetraphenylphenyl)phenyl)pyrazine
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(high-efficiency blue LED based on polyphenylphenyl compound with strong electron-accepting groups)

RN 943996-10-9 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(3',4',5'-triphenyl[1,1':2',1''-terphenyl]-4-yl)- (CA INDEX NAME)



REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 5 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2007:526192 CAPLUS

DOCUMENT NUMBER: 147:448388

TITLE: Characterization and optical properties of tetrapyrazinoporphyrazines with phenylene dendron group

AUTHOR(S): Jaung, Jae-Yun

CORPORATE SOURCE: Department of Polymer and Textile Engineering, Hanyang University, Seoul, 133-791, S. Korea

SOURCE: Dyes and Pigments (2007), 75(2), 420-425
CODEN: DYPIDX; ISSN: 0143-7208

PUBLISHER: Elsevier Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

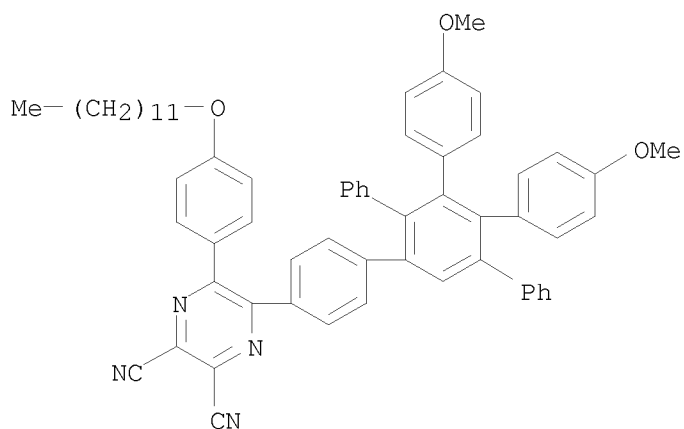
AB The treatment of the ethynyl compound with one equivalent of 3,4-bis-(4-methoxyphenyl)-2,5-diphenyl-cyclopenta-2,4-dienone in degassed p-xylene afforded the corresponding 2,3-dicyanopyrazine derivs. containing a phenylene dendron group. The absorption spectra of the tetrapyrazinoporphyrazinato copper complexes (5) with long alkyl groups dramatically changed due to mol. aggregation depending on the polarity of the solvent. The variation in their aggregation behaviors depending on the polarity of the solvent was well correlated with their chemical structures.

IT 851085-25-1P 851085-26-2P 874913-81-2P

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(characterization and optical properties of tetrapyrazinoporphyrazines with phenylene dendron group)

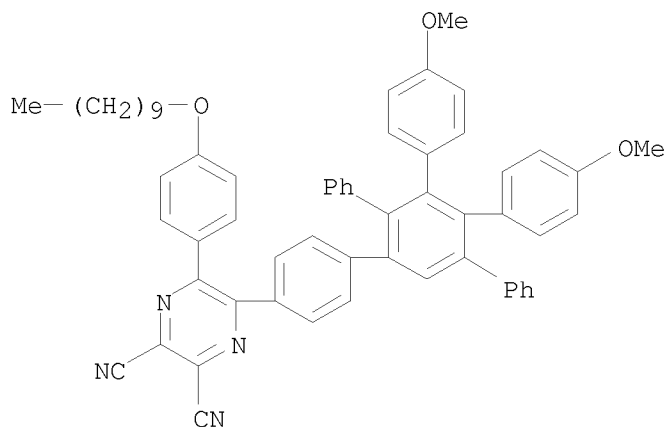
RN 851085-25-1 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[3',4'-bis(4-methoxyphenyl)-5'-phenyl[1,1':2',1''-terphenyl]-4-yl]-6-[4-(dodecyloxy)phenyl]- (9CI) (CA INDEX NAME)



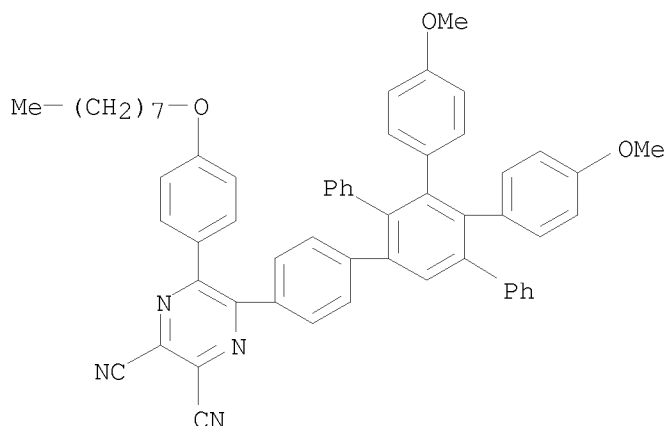
RN 851085-26-2 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[3',4'-bis(4-methoxyphenyl)-5'-phenyl[1,1':2',1''-terphenyl]-4-yl]-6-[4-(decyloxy)phenyl]- (9CI) (CA INDEX NAME)



RN 874913-81-2 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[3',4'-bis(4-methoxyphenyl)-5'-phenyl[1,1':2',1''-terphenyl]-4-yl]-6-[4-(octyloxy)phenyl]- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 6 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2007:228705 CAPLUS

DOCUMENT NUMBER: 146:463739

TITLE: Synthesis and optical/thermal properties of low molecular mass V-shaped materials based on 2,3-dicyanopyrazine

AUTHOR(S): Cristiano, Rodrigo; Westphal, Eduard; Bechtold, Ivan H.; Bortoluzzi, Adailton J.; Gallardo, Hugo

CORPORATE SOURCE: Departamento de Quimica, Universidade Federal de Santa Catarina, Florianopolis, SC, 88040-900, Brazil

SOURCE: Tetrahedron (2007), 63(13), 2851-2858

CODEN: TETRAB; ISSN: 0040-4020

PUBLISHER: Elsevier Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 146:463739

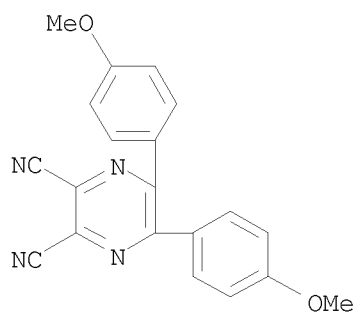
AB A novel series of luminescent low mol. mass materials containing a 2,3-dicyanopyrazine central core were synthesized through an esterification reaction between diphenol 10 and different aromatic carboxylic acids 1-6, containing terminal long alkyl chains. They have a similar V-shaped geometry with lack of planarity between the two arms, confirmed by the X-ray structure of the central core. The optical and thermal properties of these compds. were evaluated. They show blue fluorescence in solution (λ_{max} 440-480 nm) with quantum fluorescence yields (Φ_F) from 0.003 to 0.1 and Stokes shifts of around 90 nm. In solid state, optical band gaps (E_g) were from 3.14 to 3.32 eV. Thin films of 11, 13, and 14 exhibited blue fluorescence (λ_{max} 430-456 nm), and 12, 15, and 16 (more bulky) displayed green fluorescence (λ_{max} 488-512 nm). Most of the materials exhibited good thermal stability, exhibiting an amorphous glassy state after melting. Transparent amorphous films were easily obtained through spin coating and characterized by AFM anal.

IT 134071-89-9P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (crystal structure; synthesis and optical/thermal properties of low mol. mass V-shaped materials based on 2,3-dicyanopyrazine)

RN 134071-89-9 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-methoxyphenyl)- (CA INDEX NAME)

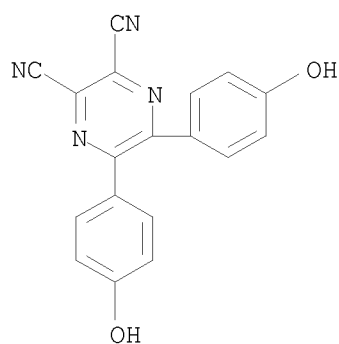


IT 935249-88-0P 935249-89-1P 935249-90-4P
935249-91-5P 935249-92-6P 935249-93-7P
935249-94-8P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(synthesis and optical/thermal properties of low mol. mass V-shaped
materials based on 2,3-dicyanopyrazine)

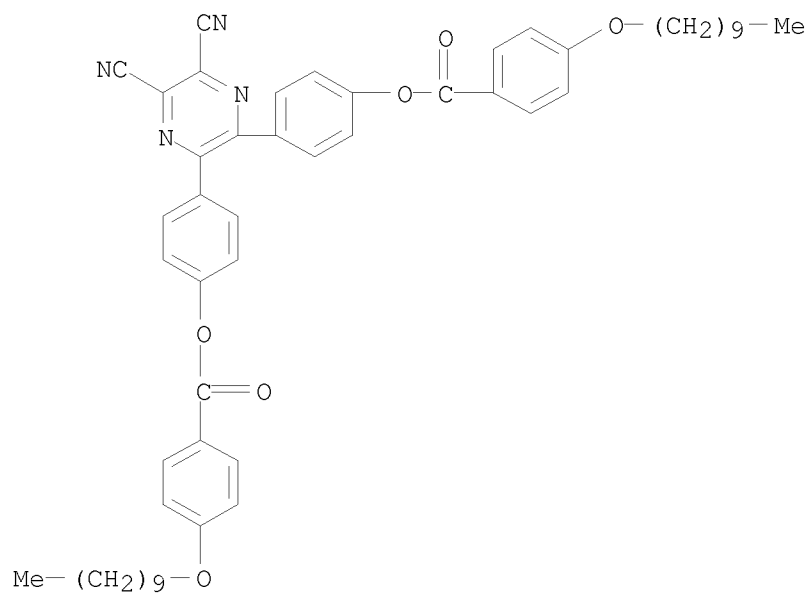
RN 935249-88-0 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-hydroxyphenyl)- (CA INDEX NAME)

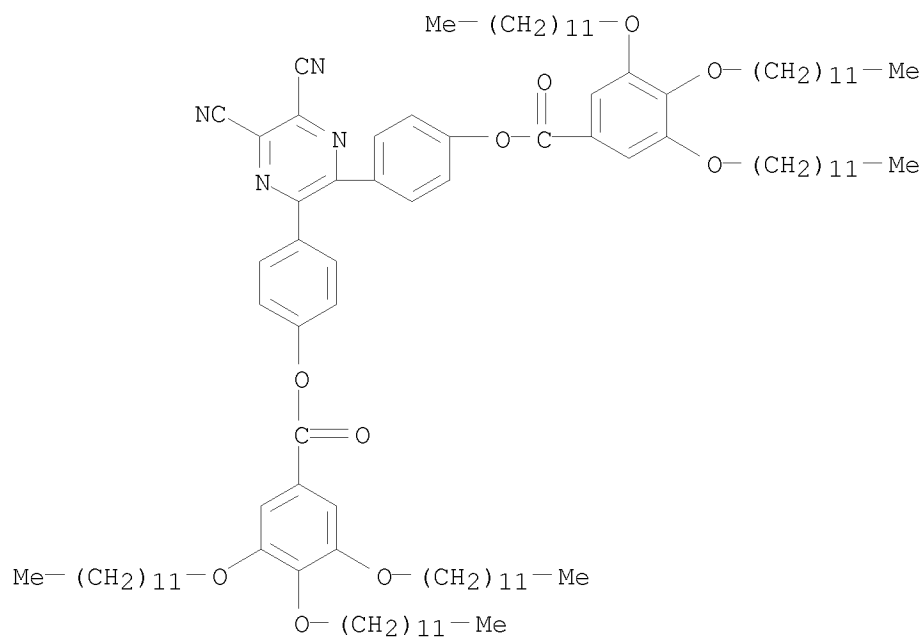


RN 935249-89-1 CAPLUS

CN Benzoic acid, 4-(decyloxy)-, 1,1'-[(5,6-dicyano-2,3-pyrazinediyl)di-4,1-
phenylene] ester (CA INDEX NAME)

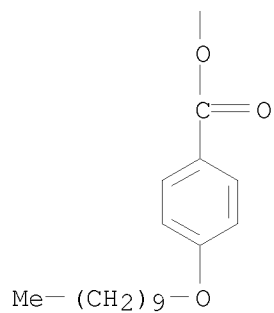
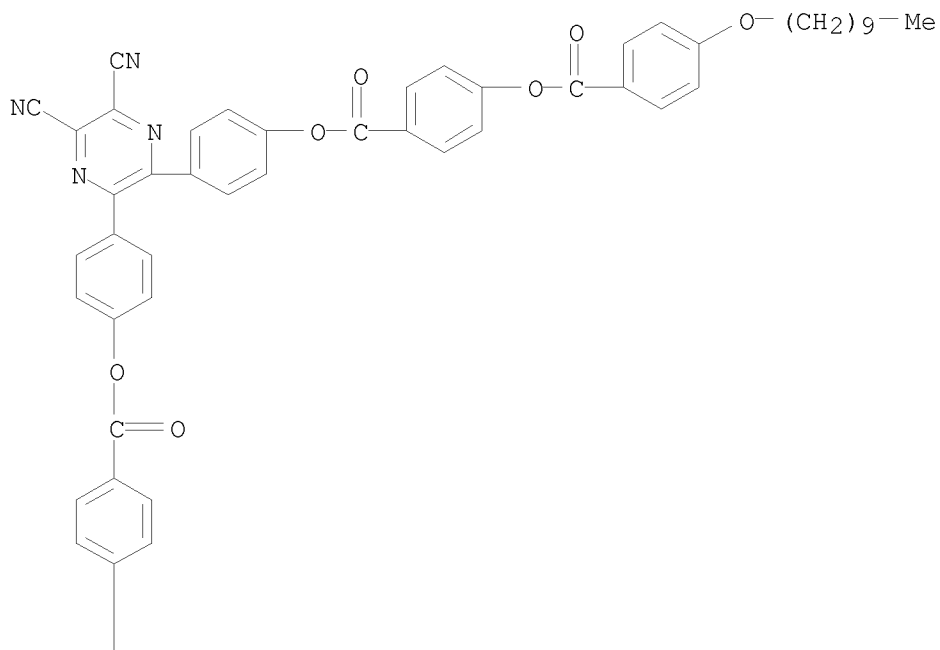


RN 935249-90-4 CAPLUS
 CN Benzoic acid, 3,4,5-tris(dodecyloxy)-, 1,1'-[(5,6-dicyano-2,3-pyrazinediyl)di-4,1-phenylene] ester (CA INDEX NAME)



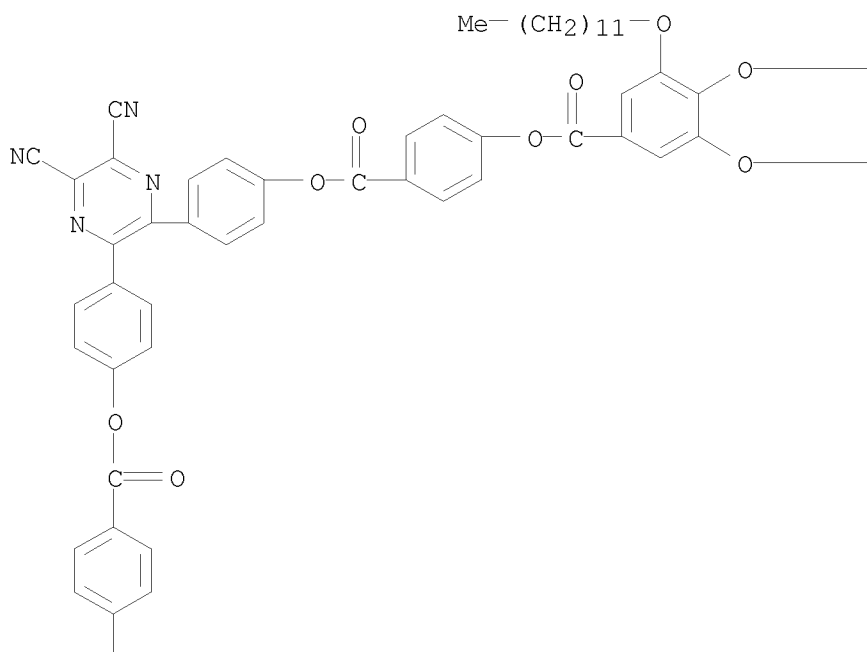
RN 935249-91-5 CAPLUS
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-(decyloxy)-, 4,4''-[(5,6-dicyano-2,3-pyrazinediyl)di-4,1-phenylene] ester (CA INDEX NAME)

RN	935249-92-6	CAPLUS
CN	Benzoic acid, 4-[[4-(decyloxy)benzoyl]oxy]-, 1,1'-[(5,6-dicyano-2,3-pyrazinediyl)di-4,1-phenylene] ester (CA INDEX NAME)	



RN 935249-93-7 CAPLUS
 CN Benzoic acid, 4-[[3,4,5-tris(dodecyloxy)benzoyl]oxy]-,
 1,1'-[(5,6-dicyano-2,3-pyrazinediyl)di-4,1-phenylene] ester (CA INDEX
 NAME)

PAGE 1-A

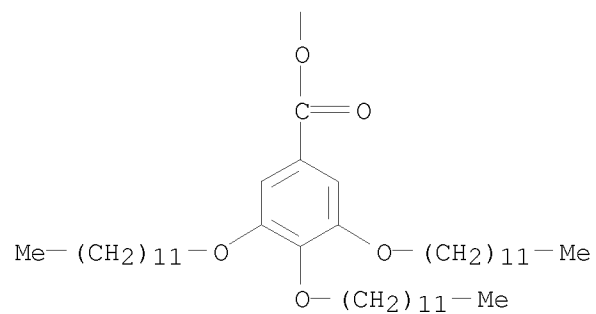


PAGE 1-B

— (CH₂)₁₁—Me

— (CH₂)₁₁—Me

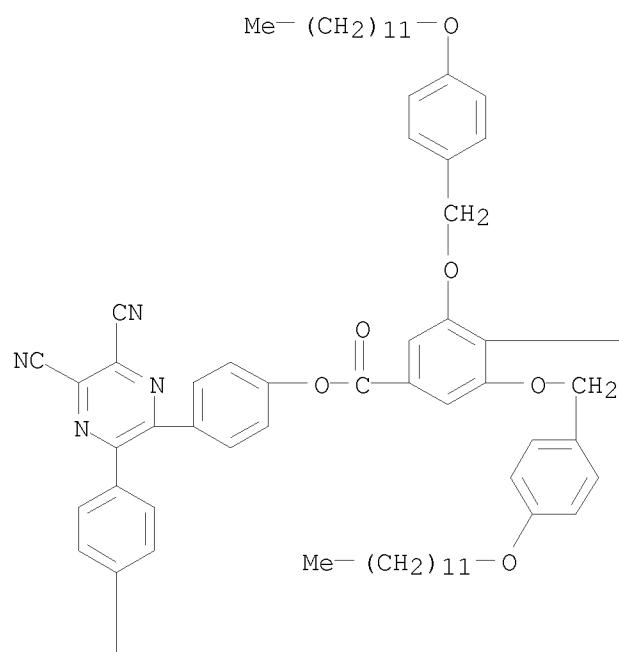
PAGE 2-A



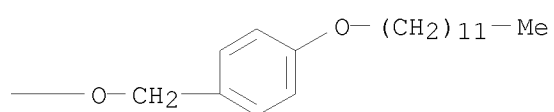
RN 935249-94-8 CAPLUS

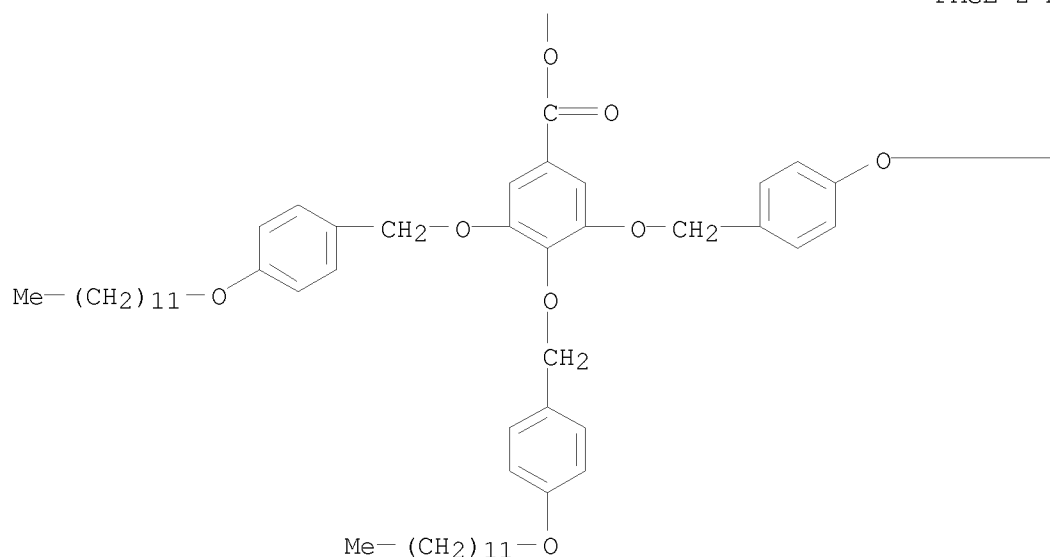
CN Benzoic acid, 3,4,5-tris[[4-(dodecyloxy)phenyl]methoxy]-, 1,1'-[(5,6-dicyano-2,3-pyrazinediyl)di-4,1-phenylene] ester (CA INDEX NAME)

PAGE 1-A



PAGE 1-B





— (CH₂)₁₁—Me

REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 7 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2007:84319 CAPLUS

DOCUMENT NUMBER: 146:184452

TITLE: Preparation of thioamides as selective CB1 antagonists for treating obesity, psychiatric and neurol. disorders

INVENTOR(S): Bostrom, Jonas; Cheng, Leifeng; Olsson, Roine

PATENT ASSIGNEE(S): Astrazeneca AB, Swed.; Astrazeneca UK Limited

SOURCE: PCT Int. Appl., 44pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2007010222	A2	20070125	WO 2006-GB2638	20060717
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW				

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
 IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ,
 CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH,
 GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
 KG, KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.:

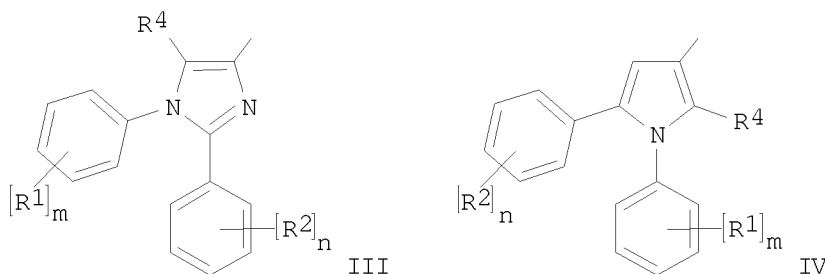
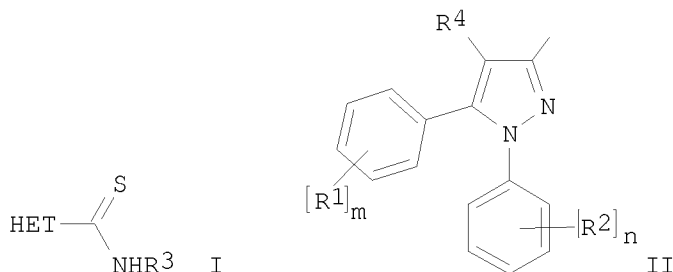
GB 2005-14739

A 20050719

OTHER SOURCE(S):

CASREACT 146:184452; MARPAT 146:184452

GI



AB The title compds. I [HET = II, III, IV, etc. (wherein R1 = alkoxy (optionally substituted by one or more F atoms), O(CH2)pPh, etc.; p = 1-3; m = 0-3; R2 = alkyl, alkoxy, OH, etc.; n = 0-3; R4 = H, alkyl, alkoxy, etc.); R3 = (un)substituted cyclohexyl, piperidino, Ph, etc.], useful in the treatment of obesity, psychiatric and neurol. disorders, were prepared E.g., a multi-step synthesis of 4-{3-[(cyclohexylamino)carbonothioyl]-1-(2,4-dichlorophenyl)-4-methyl-1H-pyrazol-5-yl}phenyl propane-1-sulfonate, starting from 4-hydroxypropiophenone, was given. Compds. I are active at the CB1 receptor (IC50 < 1 μ M). The invention also relates to methods for therapeutic use of compds. I and to pharmaceutical compns. containing them.

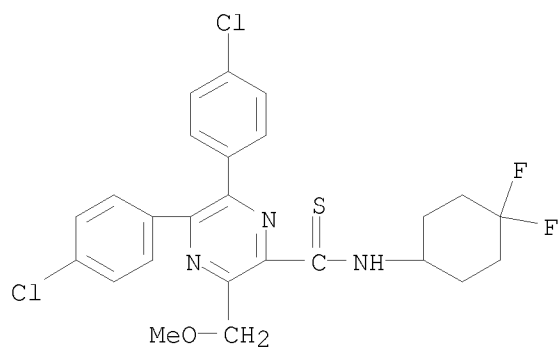
IT 921628-24-2P 921628-25-3P 921628-26-4P
 921628-27-5P 921628-28-6P 921628-29-7P
 921628-30-0P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

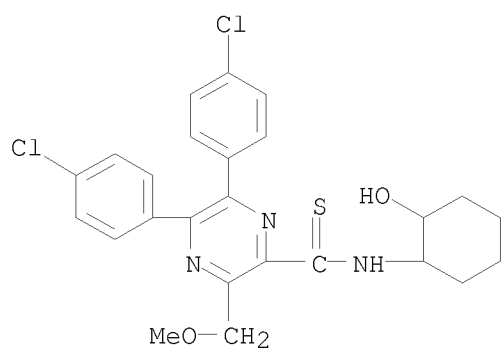
(preparation of thioamides as CB1 antagonists for treating obesity, psychiatric and neurol. disorders)

RN 921628-24-2 CAPLUS

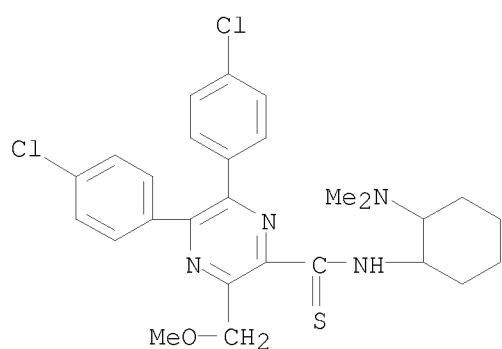
CN 2-Pyrazinecarbothioamide, 5,6-bis(4-chlorophenyl)-N-(4,4-difluorocyclohexyl)-3-(methoxymethyl)- (CA INDEX NAME)



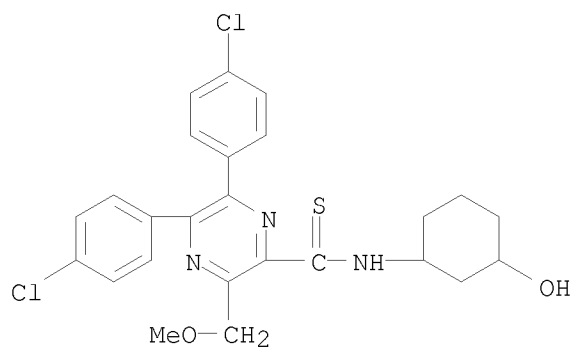
RN 921628-25-3 CAPLUS
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 3-(methoxymethyl)- (CA INDEX NAME)



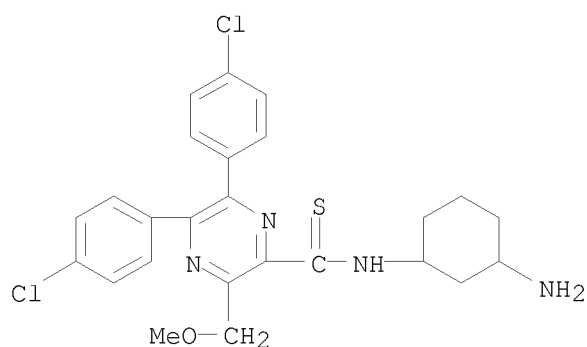
RN 921628-26-4 CAPLUS
 CN 2-Pyrazinecarbothioamide, 5,6-bis(4-chlorophenyl)-N-[2-(dimethylamino)cyclohexyl]-3-(methoxymethyl)- (CA INDEX NAME)



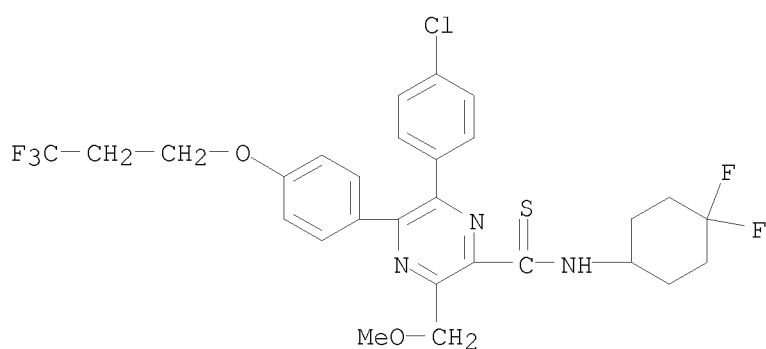
RN 921628-27-5 CAPLUS
 CN 2-Pyrazinecarbothioamide, 5,6-bis(4-chlorophenyl)-N-(3-hydroxycyclohexyl)-
 3-(methoxymethyl)- (CA INDEX NAME)



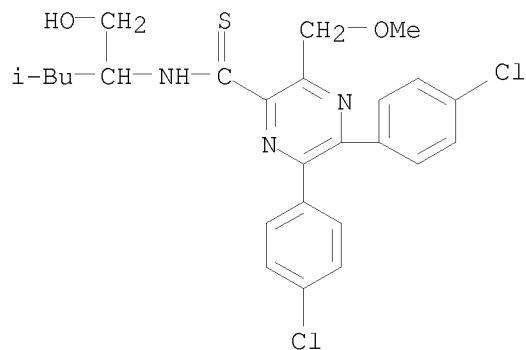
RN 921628-28-6 CAPLUS
 CN 2-Pyrazinecarbothioamide, N-(3-aminocyclohexyl)-5,6-bis(4-chlorophenyl)-3-(methoxymethyl)- (CA INDEX NAME)



RN 921628-29-7 CAPLUS
 CN 2-Pyrazinecarbothioamide, 6-(4-chlorophenyl)-N-(4,4-difluorocyclohexyl)-3-(methoxymethyl)-5-[4-(3,3,3-trifluoropropoxy)phenyl]- (CA INDEX NAME)



RN 921628-30-0 CAPLUS
 CN 2-Pyrazinecarbothioamide, 5,6-bis(4-chlorophenyl)-N-[1-(hydroxymethyl)-3-methylbutyl]-3-(methoxymethyl)- (CA INDEX NAME)



L4 ANSWER 8 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2006:1296274 CAPLUS

DOCUMENT NUMBER: 146:260905

TITLE: New Organic Light-Emitting Materials: Synthesis, Thermal, Photophysical, Electrochemical, and Electroluminescent Properties

AUTHOR(S): Chen, Shiyun; Xu, Xinjun; Liu, Yunqi; Qiu, Wenfeng; Yu, Gui; Wang, Huaping; Zhu, Daoben

CORPORATE SOURCE: Key Laboratory of Organic Solids, Institute of Chemistry, Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China

SOURCE: Journal of Physical Chemistry C (2007), 111(2), 1029-1034

CODEN: JPCCCK; ISSN: 1932-7447

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 146:260905

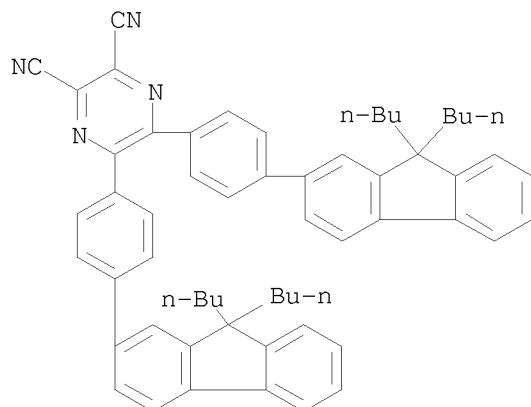
AB A new series of organic-light-emitting materials, 6,7-dimethyl-2,3-bis(4'-diphenylaminobiphenyl-4-yl)quinoxaline (MAPQ), 6,7-dimethyl-2,3-bis[4-(9,9-dibutyl-9H-fluoren-2-yl)phenyl]quinoxaline (MFPQ), 2,3-dicyano-5,6-bis[4-(9,9-dibutyl-9H-fluoren-2-yl)phenyl]pyrazine (CFPP), and 6,7-dicyano-2,3-bis[4-(9,9-dibutyl-9H-fluoren-2-yl)phenyl]quinoxaline (CFPQ), have been synthesized in high yields and fully characterized. These compds. have high thermal stability and show bright-light-emission varying from blue to green owing to the different strengths of the donor and acceptor. Moreover, good reversible oxidation or reduction waves were observed

except for compound MFPQ due to the potential limitation of the solvent we used, which suggests these compds. have potential applications for hole/electron transportation. Organic light-emitting diodes were fabricated in a facile nondoped configuration based on these materials. Compared to MFPQ, CFPP, and CFPQ, the higher lying HOMO level of MAPQ facilitates more efficient hole injection/transport and a higher charge-recombination rate; thus, the device based on MAPQ shows the highest luminous efficiency. For compds. CFPP and CFPQ, the LUMO levels are obviously decreased because of the incorporation of electron-accepting cyano group, so the devices based on these two compds. display better electron transportation/injection properties and better performances than those of MFPQ. These results demonstrate that high-performance light-emitting devices can be achieved from intramol. charge-transfer emission.

IT 919475-08-4P

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(light emitting layer; synthesis, thermal, photophys., electrochem., and electroluminescent properties of donor-acceptor quinoxaline and

pyrazine derivs.)
 RN 919475-08-4 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(9,9-dibutyl-9H-fluoren-2-yl)phenyl]-
 (CA INDEX NAME)



REFERENCE COUNT: 69 THERE ARE 69 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 9 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2006:1262121 CAPLUS

DOCUMENT NUMBER: 146:251438

TITLE: Photoluminescence and electroluminescence of a novel green-yellow emitting material-5,6-Bis-[4-(naphthalene-1-yl-phenyl-amino)-phenyl]-pyrazine-2,3-dicarbonitrile
 AUTHOR(S): Chew, Siewling; Wang, Pengfei; Hong, Zirou; Kwong, Hoi Lun; Tang, Jianxin; Sun, Shiling; Lee, Chun Sing; Lee, Shuit-Tong

CORPORATE SOURCE: Center of Super-Diamond and Advanced Films (COSDAF) and Department of Physics and Materials Science, City University of Hong Kong, Hong Kong SAR, Peop. Rep. China

SOURCE: Journal of Luminescence (2007), 124(2), 221-227
 CODEN: JLUMA8; ISSN: 0022-2313

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 146:251438

AB A new compound with intramol. charge transfer (ICT) property-5,6-Bis-[4-(naphthalene-1-yl-phenyl-amino)-phenyl]-pyrazine-2,3-dicarbonitrile(BNPPDC) was synthesized. The new compound was strongly fluorescent in non-polar and moderately polar solvents, as well as in thin solid film. The absorption and emission maxima shifted to longer wavelength with increasing solvent polarity. The fluorescence quantum yield also increased with increasing solvent polarity from non-polar to moderately polar solvents, then decreased with further increase of solvent polarity. This indicates both "pos." and "neg." solvatokinetic effects co-existed. Using this material as hole-transporting emitter and host emitter, we fabricated two electroluminescent (EL) devices with structures of A (ITO)/BNPPDC (45 nm)/1,3,5-tris(N-phenylbenzimidazol-2-yl)benzene (TPBI) (45 nm)/Mg:Ag (200 nm) and B (ITO)/N,N'-diphenyl-N,N'-bis-(3-methylphenyl) (1,1'-diphenyl)4,4'-diamine (TPD) (50 nm)/BNPPDC (20 nm)/1,3,5-tris(N-phenylbenzimidazol-2-yl)benzene (TPBI) (45 nm)/Mg:Ag (200 nm). The devices showed green-yellow EL emission with good efficiency and high brightness. For example, the device A exhibited a high brightness of 17400 cd/m² at a driving voltage of 11 V and a very low turn-on voltage

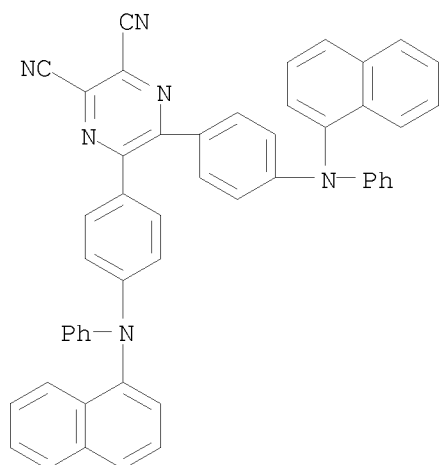
(2.9 V), as well as a maximum luminous efficiency 3.61 cd/A. The device B showed a similar performance with a high brightness of 12650 cd/m² at a driving voltage of 13 V and a maximum luminous efficiency 3.62 cd/A. In addition, the EL devices using BNPPDC as a host and 4-(dicyanomethylene)-2-*t*-butyl-6-(1,1,7,7-tetramethyljulolidyl-9-enyl)-4H-pyran (DCJTb) as a dopant (configuration: ITO/TPD (60 nm)/BNPPDC:DCJTb (2%) (30 nm)/TPBI (35 nm)/Mg:Ag (200 nm)) showed a good performance with a brightness of 150 cd/m² at 4.5 V, a maximum brightness of 12600 cd/m² at 11.5 V, and a maximum luminous efficiency of 3.30 cd/A.

IT 898546-75-3P

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(photoluminescence and electroluminescence of novel green-yellow emitting material-5,6-Bis-[4-(naphthalene-1-yl-phenyl-amino)-phenyl]-pyrazine-2,3-dicarbonitrile)

RN 898546-75-3 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(1-naphthalenylphenylamino)phenyl]-
(CA INDEX NAME)

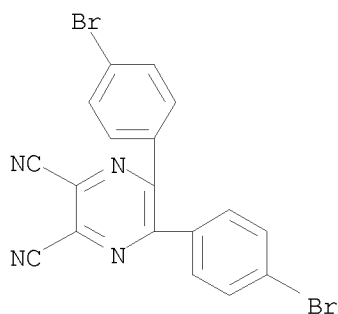


IT 101579-12-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(starting material; photoluminescence and electroluminescence of novel green-yellow emitting material-5,6-Bis-[4-(naphthalene-1-yl-phenyl-amino)-phenyl]-pyrazine-2,3-dicarbonitrile)

RN 101579-12-8 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-bromophenyl)- (CA INDEX NAME)



REFERENCE COUNT:

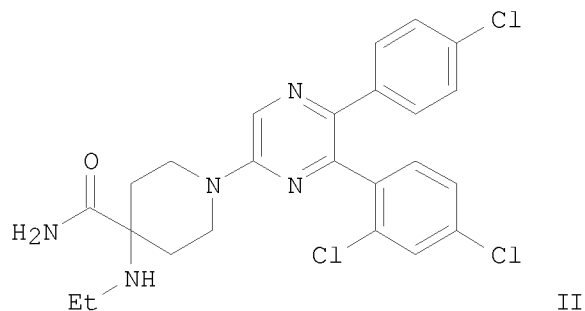
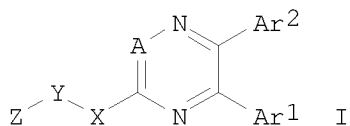
38

THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 10 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2006:1124114 CAPLUS
 DOCUMENT NUMBER: 145:455030
 TITLE: Preparation of substituted heteroaryl CB1 antagonists
 INVENTOR(S): Yuan, Jun; Guo, Qin; Zhao, He; Hu, Shaojing;
 Whitehouse, Darren; Fringle, Wallace; Mao, Jianmin;
 Maynard, George; Hammer, Jack; Wustrow, David; Li,
 Hongbin
 PATENT ASSIGNEE(S): Neurogen Corporation, USA
 SOURCE: PCT Int. Appl., 447pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006113704	A2	20061026	WO 2006-US14548	20060418
WO 2006113704	A3	20070208		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM US 2007078135 A1 20070405 US 2006-406532 20060418 PRIORITY APPLN. INFO.: US 2005-672452P P 20050418 OTHER SOURCE(S): MARPAT 145:455030 GI				



AB The title compds. I [A = CR1 or N; Ar1, Ar2 = (un)substituted 5-10 membered carbocycle and heterocycle; X = (un)substituted CH2, O, NH or SOMNH; m = 0-2; Y = (un)substituted alkylene; Z = (un)substituted OH, NH2, SOMNH2, etc.; R1 = H, halo, CN, etc.] which may be used to modulate CB1 activity in vivo or in vitro, and are particularly useful in the treatment of conditions responsive to CB1 modulation in humans, domesticated companion animals and livestock animals, including appetite disorders, obesity and addictive disorders, were prepared E.g., a multi-step synthesis of II, starting from 2,6-dichloropyrazine and 4-(ethylamino)piperidine-4-carboxamide, was given. Exemplified compds. I were tested at CB1 receptor. Thus, II as many other representative compds. I showed IC50 of 2 μ M or less. Pharmaceutical compns. and methods for using compds. I to treat disorders responsive to CB1 modulation are provided, as are methods for using such ligands for receptor localization studies and various in vitro assays.

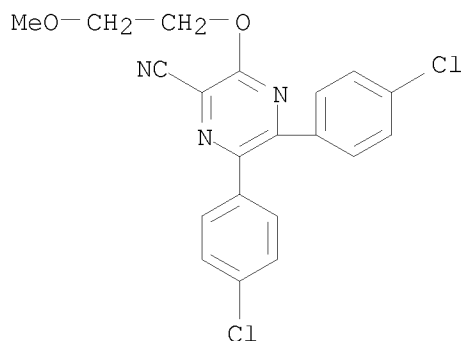
IT 913269-77-9P 913269-78-0P 913269-81-5P
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 913282-56-1P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of substituted heteroaryl compds. useful in treatment of diseases responsive to CB1 activation)

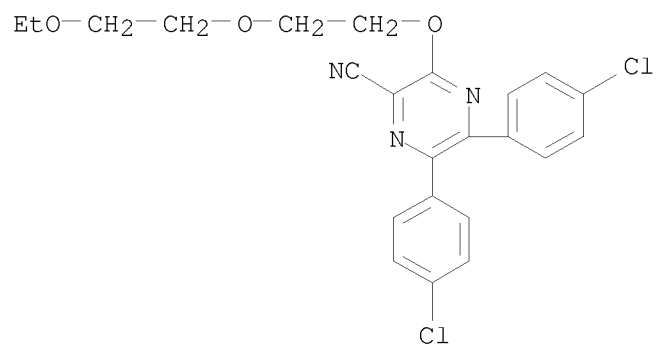
RN 913269-77-9 CAPLUS

CN Pyrazinecarbonitrile, 5,6-bis(4-chlorophenyl)-3-(2-methoxyethoxy)- (9CI)
 (CA INDEX NAME)



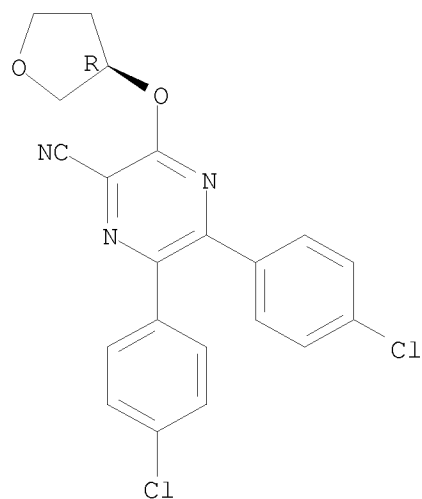
RN 913269-78-0 CAPLUS

CN Pyrazinecarbonitrile, 5,6-bis(4-chlorophenyl)-3-[2-(2-ethoxyethoxy)ethoxy]- (9CI) (CA INDEX NAME)

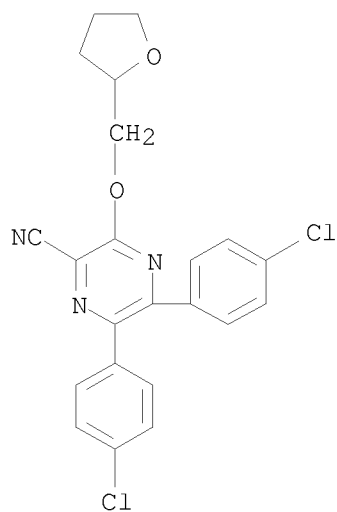


RN 913269-81-5 CAPLUS
 CN Pyrazinecarbonitrile, 5,6-bis(4-chlorophenyl)-3-[[(3R)-tetrahydro-3-furanyl]oxy]- (9CI) (CA INDEX NAME)

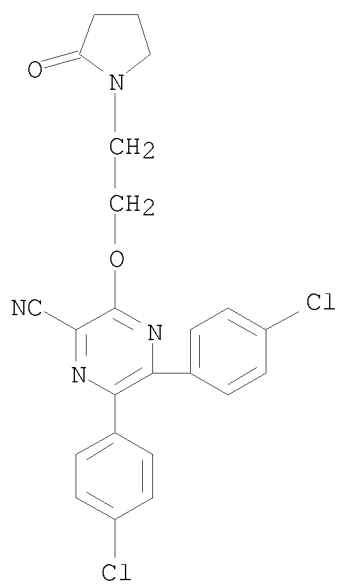
Absolute stereochemistry.



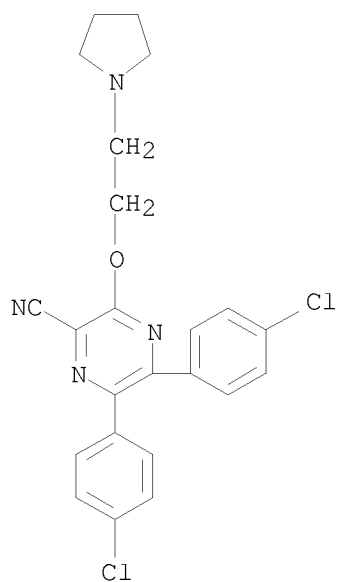
RN 913269-82-6 CAPLUS
 CN Pyrazinecarbonitrile, 5,6-bis(4-chlorophenyl)-3-[(tetrahydro-2-furanyl)methoxy]- (9CI) (CA INDEX NAME)



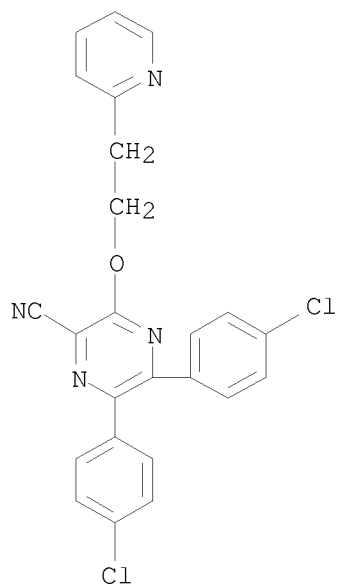
RN 913269-90-6 CAPLUS
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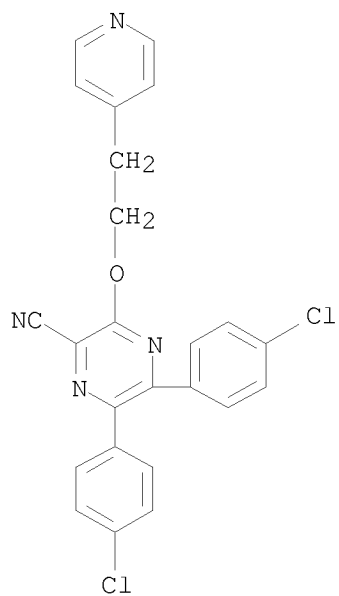
RN 913269-91-7 CAPLUS
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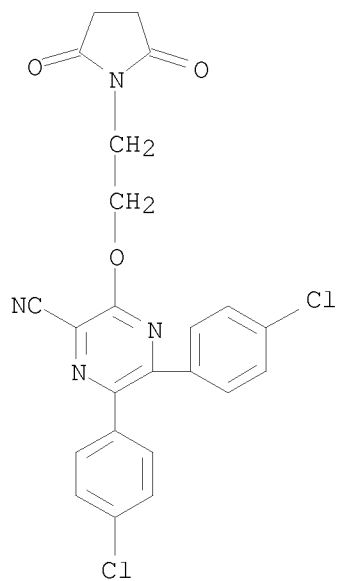
RN 913269-92-8 CAPLUS
 CN Pyrazinecarbonitrile, 5,6-bis(4-chlorophenyl)-3-[2-(2-pyridinyl)ethoxy]-
 (9CI) (CA INDEX NAME)



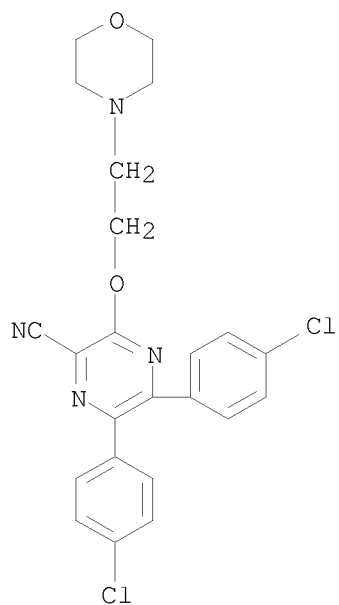
RN 913269-93-9 CAPLUS
 CN Pyrazinecarbonitrile, 5,6-bis(4-chlorophenyl)-3-[2-(4-pyridinyl)ethoxy]-
 (9CI) (CA INDEX NAME)



RN 913269-94-0 CAPLUS
 CN Pyrazinecarbonitrile, 5,6-bis(4-chlorophenyl)-3-[2-(2,5-dioxo-1-pyrrolidinyl)ethoxy]- (9CI) (CA INDEX NAME)

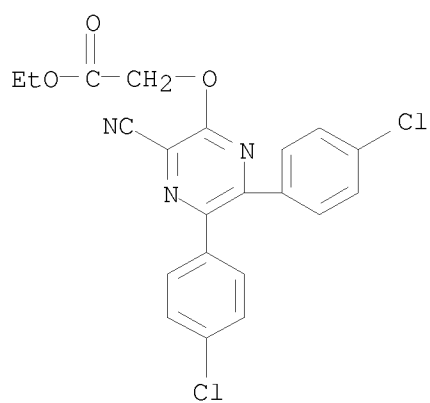


RN 913269-96-2 CAPLUS
 CN Pyrazinecarbonitrile, 5,6-bis(4-chlorophenyl)-3-[2-(4-morpholinyl)ethoxy]- (9CI) (CA INDEX NAME)



RN 913270-07-2 CAPLUS

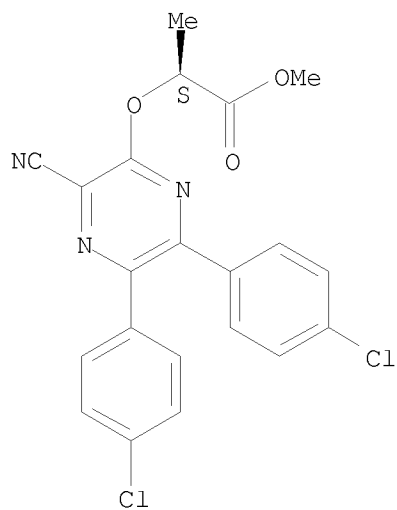
CN Acetic acid, [[5,6-bis(4-chlorophenyl)-3-cyanopyrazinyl]oxy]-, ethyl ester
(9CI) (CA INDEX NAME)



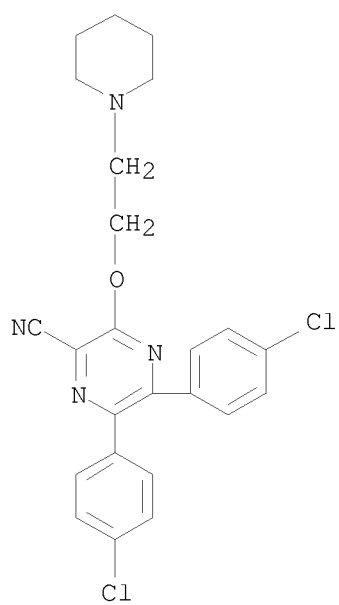
RN 913270-08-3 CAPLUS

CN Propanoic acid, 2-[[5,6-bis(4-chlorophenyl)-3-cyanopyrazinyl]oxy]-, methyl
ester, (2S)- (9CI) (CA INDEX NAME)

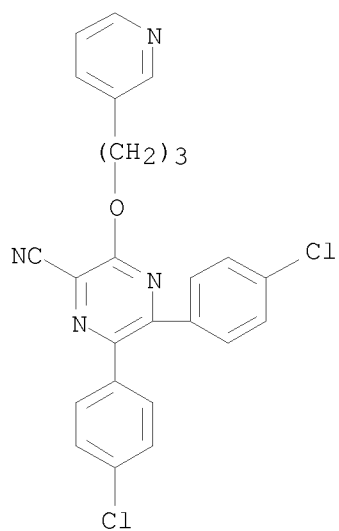
Absolute stereochemistry.



RN 913270-15-2 CAPLUS
 CN Pyrazinecarbonitrile, 5,6-bis(4-chlorophenyl)-3-[2-(1-piperidinyl)ethoxy]-
 (9CI) (CA INDEX NAME)

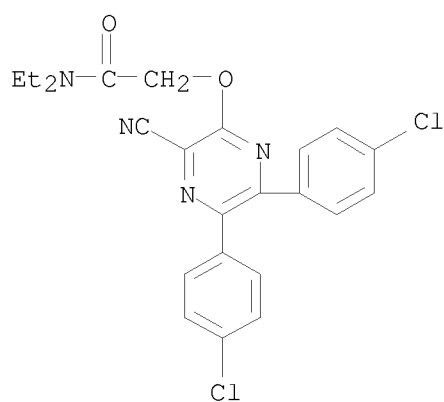


RN 913270-16-3 CAPLUS
 CN Pyrazinecarbonitrile, 5,6-bis(4-chlorophenyl)-3-[3-(3-pyridinyl)propoxy]-
 (9CI) (CA INDEX NAME)



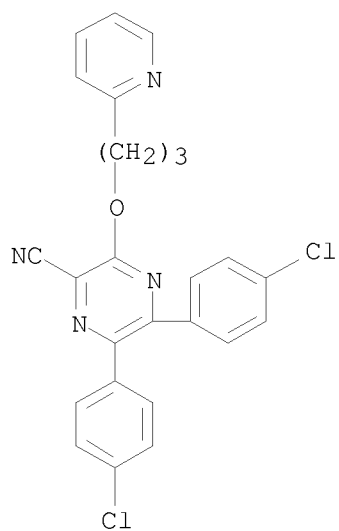
RN 913270-19-6 CAPLUS

CN Acetamide, 2-[[5,6-bis(4-chlorophenyl)-3-cyanopyrazinyl]oxy]-N,N-diethyl-
(9CI) (CA INDEX NAME)



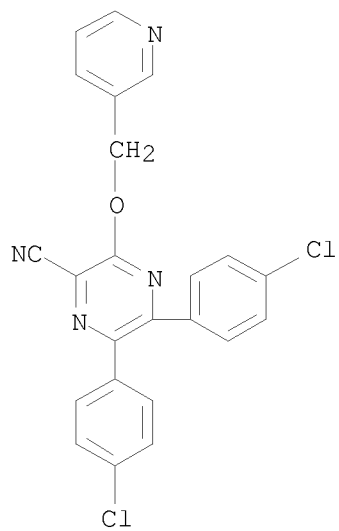
RN 913270-21-0 CAPLUS

CN Pyrazinecarbonitrile, 5,6-bis(4-chlorophenyl)-3-[3-(2-pyridinyl)propoxy]-
(9CI) (CA INDEX NAME)



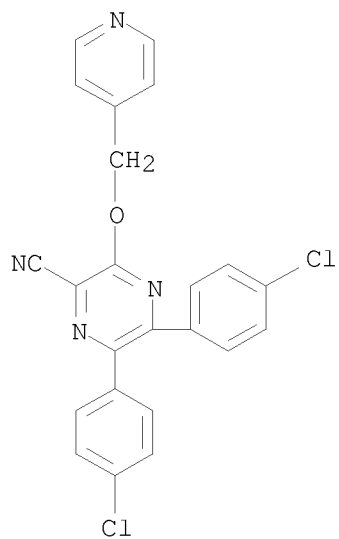
RN 913270-23-2 CAPLUS

CN Pyrazinecarbonitrile, 5,6-bis(4-chlorophenyl)-3-(3-pyridinylmethoxy)-
(9CI) (CA INDEX NAME)

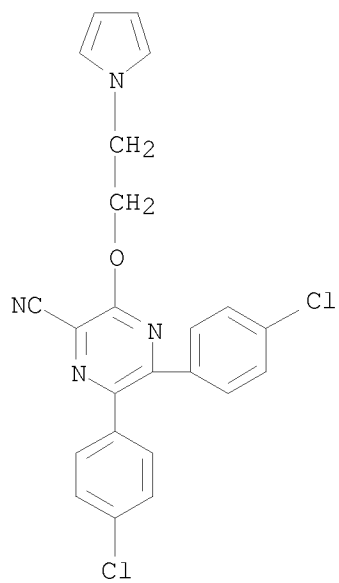


RN 913270-37-8 CAPLUS

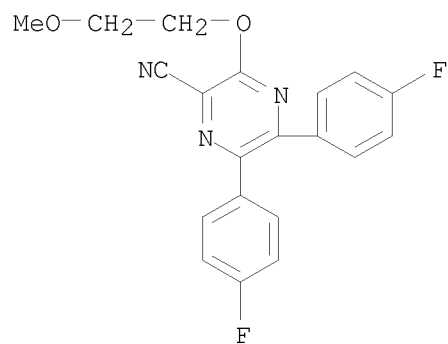
CN Pyrazinecarbonitrile, 5,6-bis(4-chlorophenyl)-3-(4-pyridinylmethoxy)-
(9CI) (CA INDEX NAME)



RN 913270-38-9 CAPLUS
 CN Pyrazinecarbonitrile, 5,6-bis(4-chlorophenyl)-3-[2-(1H-pyrrol-1-yl)ethoxy]-
 (9CI) (CA INDEX NAME)



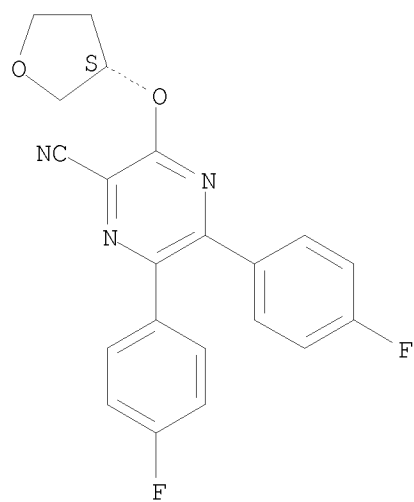
RN 913270-49-2 CAPLUS
 CN Pyrazinecarbonitrile, 5,6-bis(4-fluorophenyl)-3-(2-methoxyethoxy)- (9CI)
 (CA INDEX NAME)



RN 913270-50-5 CAPLUS

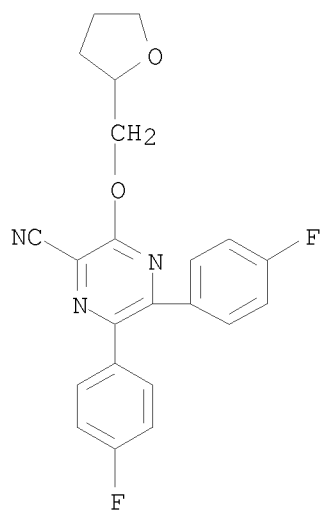
CN Pyrazinecarbonitrile, 5,6-bis(4-fluorophenyl)-3-[[(3S)-tetrahydro-3-furanyl]oxy]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

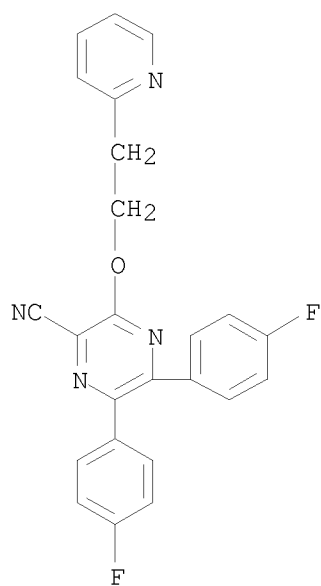


RN 913270-51-6 CAPLUS

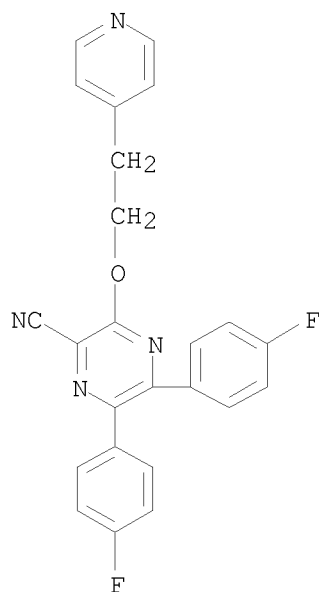
CN Pyrazinecarbonitrile, 5,6-bis(4-fluorophenyl)-3-[(tetrahydro-2-furanyl)methoxy]- (9CI) (CA INDEX NAME)



RN 913270-52-7 CAPLUS
 CN Pyrazinecarbonitrile, 5,6-bis(4-fluorophenyl)-3-[2-(2-pyridinyl)ethoxy]-
 (9CI) (CA INDEX NAME)



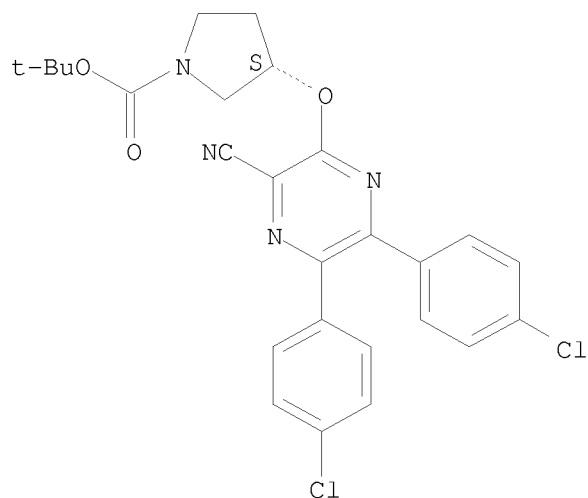
RN 913270-54-9 CAPLUS
 CN Pyrazinecarbonitrile, 5,6-bis(4-fluorophenyl)-3-[2-(4-pyridinyl)ethoxy]-
 (9CI) (CA INDEX NAME)



RN 913272-51-2 CAPLUS

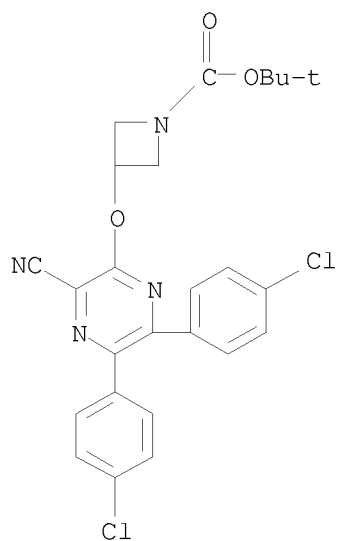
CN 1-Pyrrolidinecarboxylic acid, 3-[[5,6-bis(4-chlorophenyl)-3-cyanopyrazinyl]oxy]-, 1,1-dimethylethyl ester, (3S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

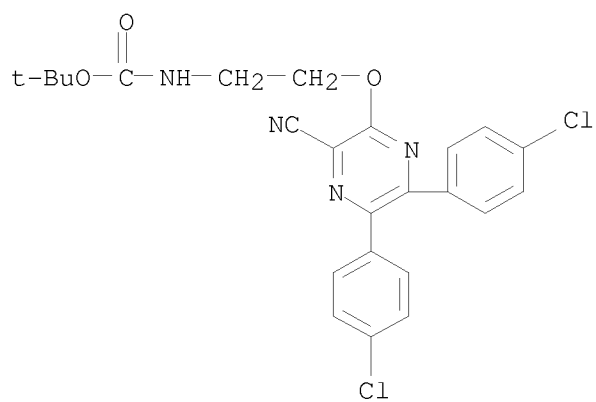


RN 913272-53-4 CAPLUS

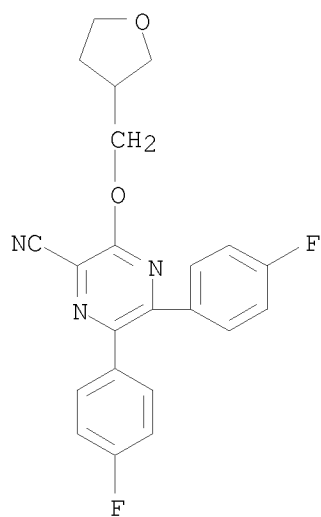
CN 1-Azetidinecarboxylic acid, 3-[[5,6-bis(4-chlorophenyl)-3-cyanopyrazinyl]oxy]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



RN 913272-54-5 CAPLUS
 CN Carbamic acid, [2-[[5,6-bis(4-chlorophenyl)-3-cyanopyrazinyl]oxy]ethyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

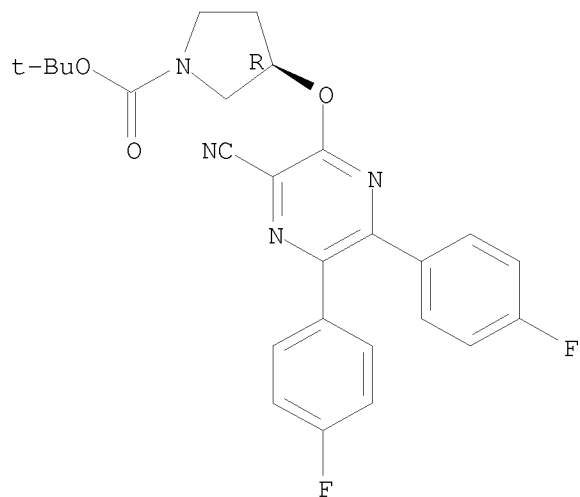


RN 913272-58-9 CAPLUS
 CN Pyrazinecarbonitrile, 5,6-bis(4-fluorophenyl)-3-[(tetrahydro-3-furanyl)methoxy]- (9CI) (CA INDEX NAME)



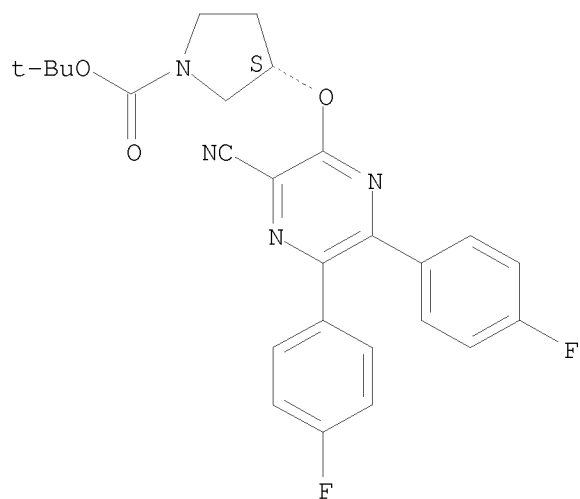
RN 913273-24-2 CAPLUS
 CN 1-Pyrrolidinecarboxylic acid, 3-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-, 1,1-dimethylethyl ester, (3R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



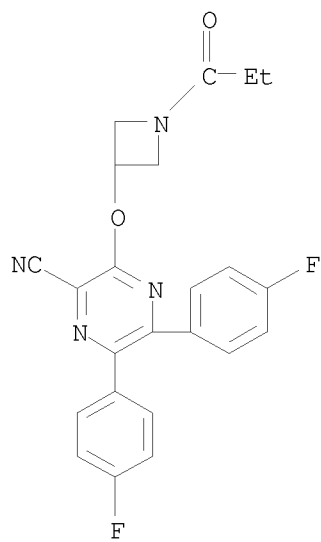
RN 913273-25-3 CAPLUS
 CN 1-Pyrrolidinecarboxylic acid, 3-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-, 1,1-dimethylethyl ester, (3S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



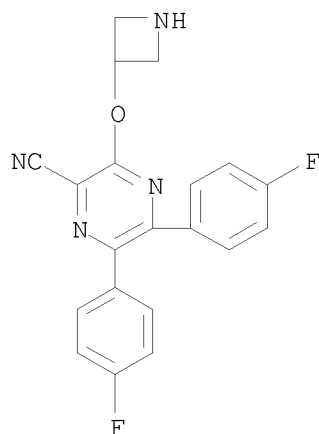
RN 913273-26-4 CAPLUS

CN Azetidine, 3-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-1-(1-oxopropyl)- (9CI) (CA INDEX NAME)



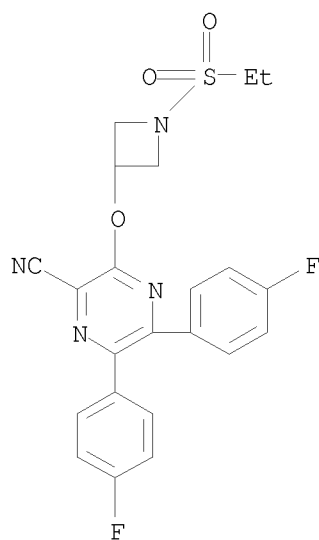
RN 913273-27-5 CAPLUS

CN Pyrazinecarbonitrile, 3-(3-azetidinyloxy)-5,6-bis(4-fluorophenyl)- (9CI) (CA INDEX NAME)



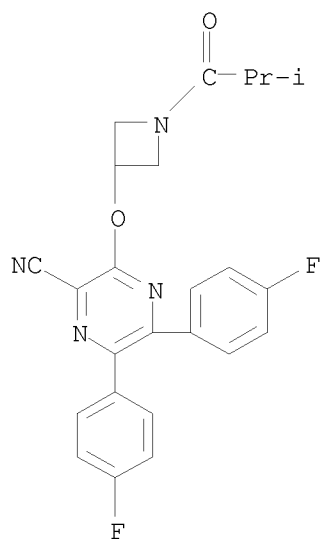
RN 913273-28-6 CAPLUS

CN Azetidine, 3-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-1-(ethylsulfonyl)- (9CI) (CA INDEX NAME)



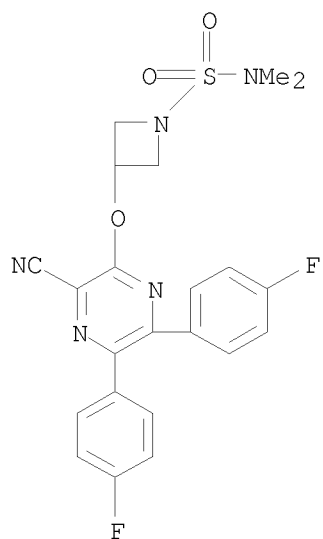
RN 913273-29-7 CAPLUS

CN Azetidine, 3-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-1-(2-methyl-1-oxopropyl)- (9CI) (CA INDEX NAME)



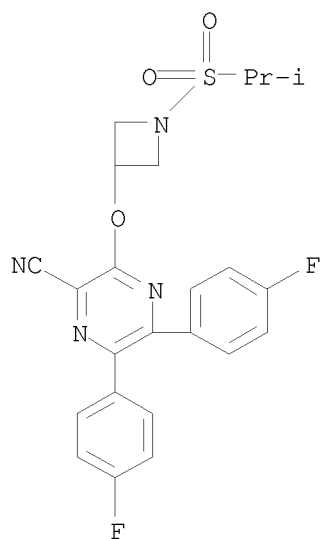
RN 913273-30-0 CAPLUS

CN 1-Azetidinesulfonamide, 3-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-N,N-dimethyl- (9CI) (CA INDEX NAME)



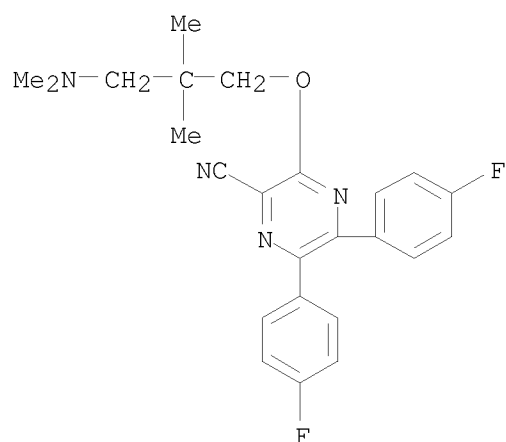
RN 913273-31-1 CAPLUS

CN Azetidine, 3-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-1-[(1-methylethyl)sulfonyl]- (9CI) (CA INDEX NAME)



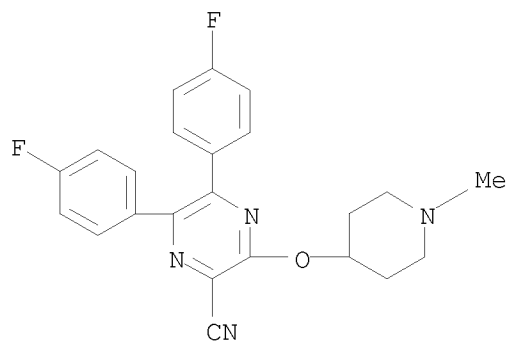
RN 913273-32-2 CAPLUS

CN Pyrazinecarbonitrile, 3-[3-(dimethylamino)-2,2-dimethylpropoxy]-5,6-bis(4-fluorophenyl)- (9CI) (CA INDEX NAME)

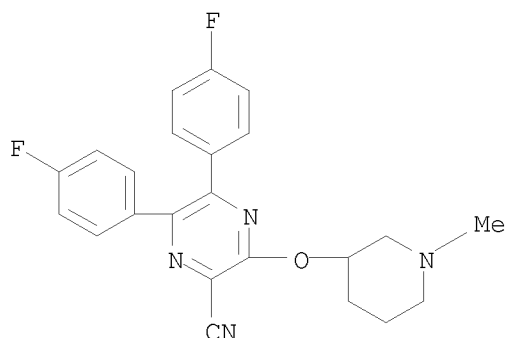


RN 913273-33-3 CAPLUS

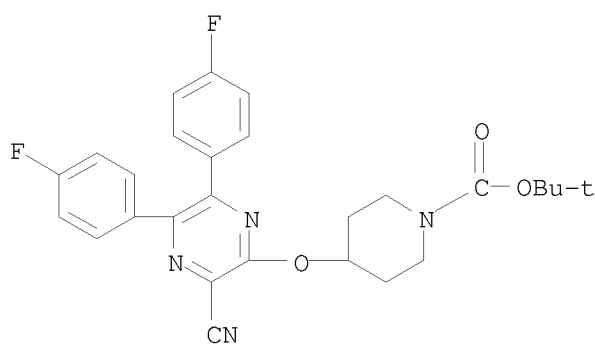
CN Pyrazinecarbonitrile, 5,6-bis(4-fluorophenyl)-3-[(1-methyl-4-piperidinyl)oxy]- (9CI) (CA INDEX NAME)



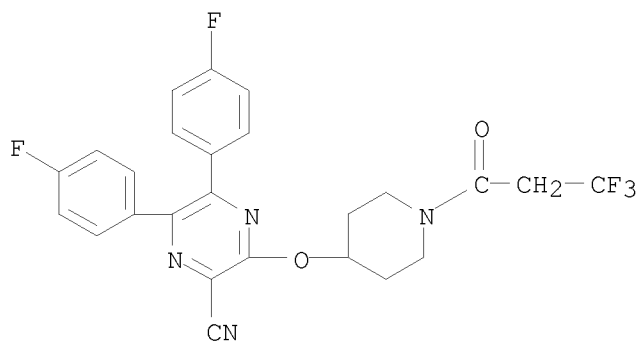
RN 913273-34-4 CAPLUS
 CN Pyrazinecarbonitrile, 5,6-bis(4-fluorophenyl)-3-[(1-methyl-3-piperidinyl)oxy]- (9CI) (CA INDEX NAME)



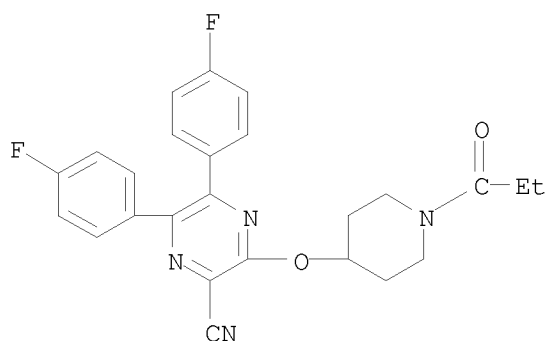
RN 913275-95-3 CAPLUS
 CN 1-Piperidinecarboxylic acid, 4-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



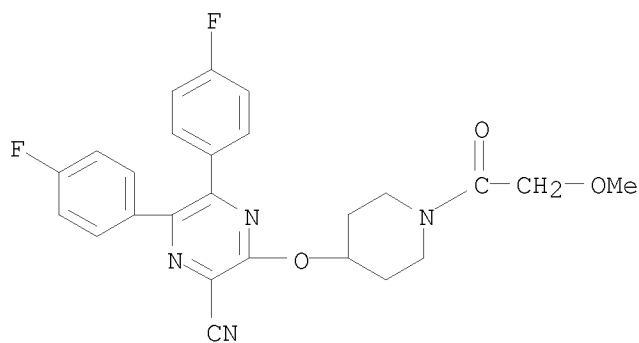
RN 913275-97-5 CAPLUS
 CN Piperidine, 4-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-1-(3,3,3-trifluoro-1-oxopropyl)- (9CI) (CA INDEX NAME)



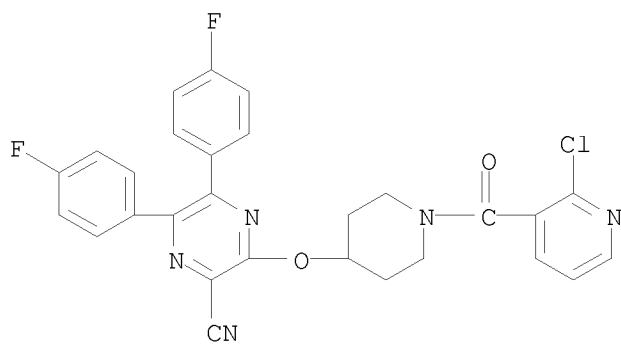
RN 913275-98-6 CAPLUS
 CN Piperidine, 4-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-1-(1-oxopropyl)- (9CI) (CA INDEX NAME)



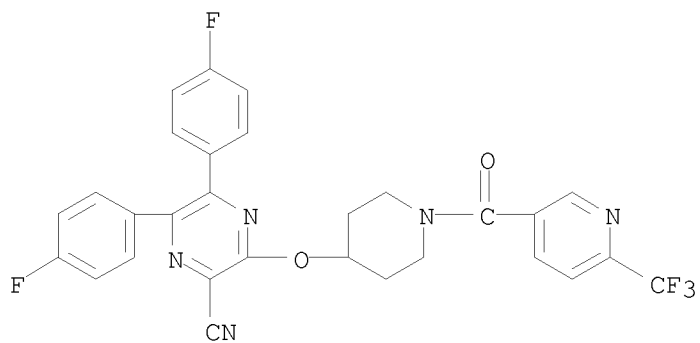
RN 913275-99-7 CAPLUS
 CN Piperidine, 4-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-1-(methoxyacetyl)- (9CI) (CA INDEX NAME)



RN 913276-00-3 CAPLUS
 CN Piperidine, 1-[(2-chloro-3-pyridinyl)carbonyl]-4-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]- (9CI) (CA INDEX NAME)

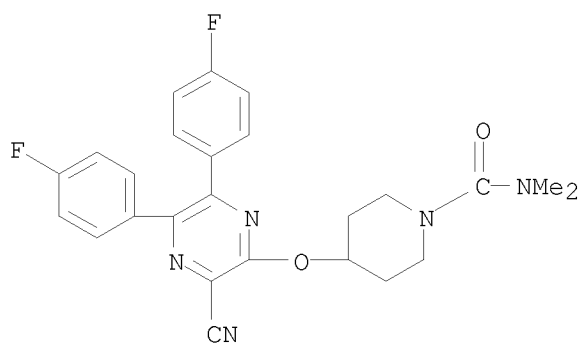


RN 913276-01-4 CAPLUS
 CN Piperidine, 4-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-1-[[6-(trifluoromethyl)-3-pyridinyl]carbonyl]- (9CI) (CA INDEX NAME)



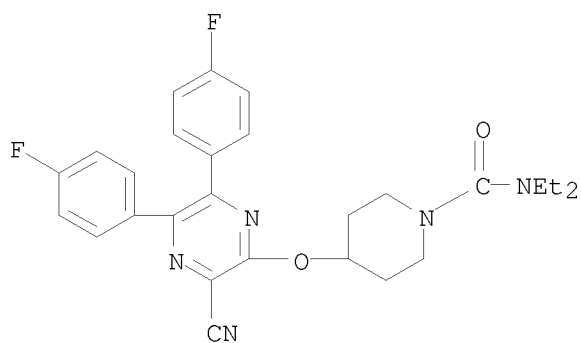
RN 913276-02-5 CAPLUS

CN 1-Piperidinecarboxamide, 4-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-N,N-dimethyl- (9CI) (CA INDEX NAME)



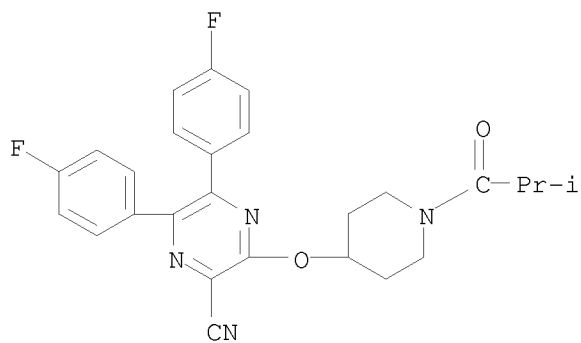
RN 913276-03-6 CAPLUS

CN 1-Piperidinecarboxamide, 4-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-N,N-diethyl- (9CI) (CA INDEX NAME)

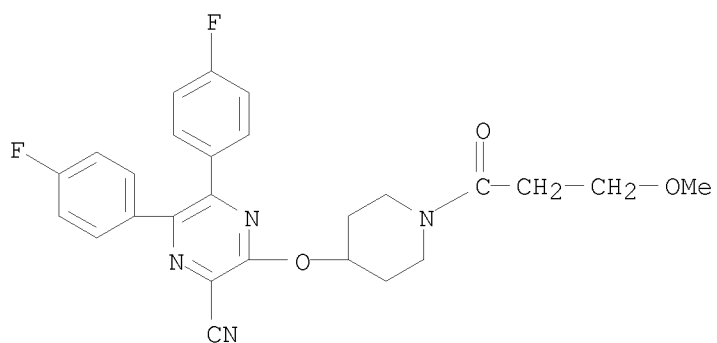


RN 913276-04-7 CAPLUS

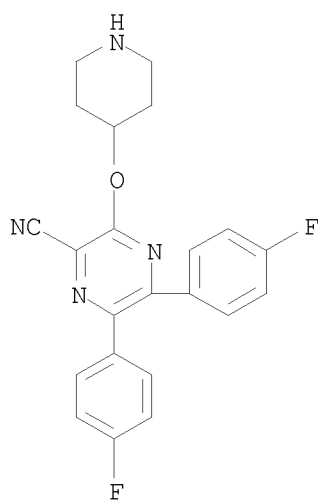
CN Piperidine, 4-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-1-(2-methyl-1-oxopropyl)- (9CI) (CA INDEX NAME)



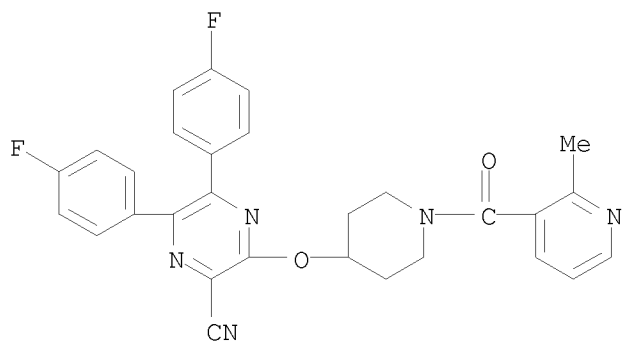
RN 913276-05-8 CAPLUS
 CN Piperidine, 4-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-1-(3-methoxy-1-oxopropyl)- (9CI) (CA INDEX NAME)



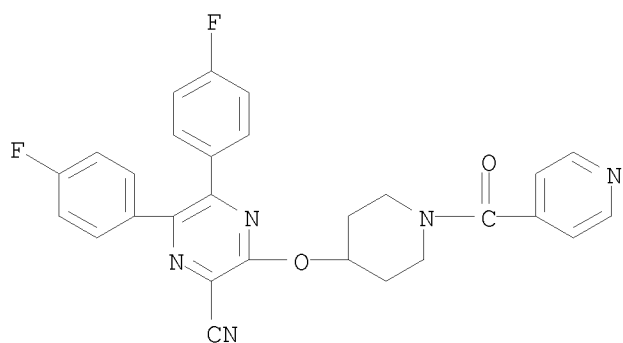
RN 913276-51-4 CAPLUS
 CN Pyrazinecarbonitrile, 5,6-bis(4-fluorophenyl)-3-(4-piperidinyloxy)- (9CI) (CA INDEX NAME)



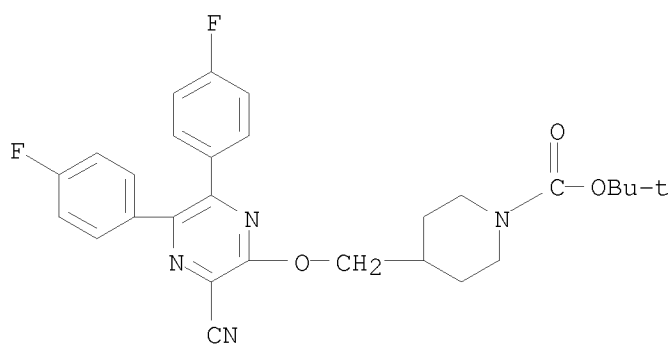
RN 913276-52-5 CAPLUS
 CN Piperidine, 4-[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-1-[(2-methyl-3-pyridinyl)carbonyl]- (9CI) (CA INDEX NAME)



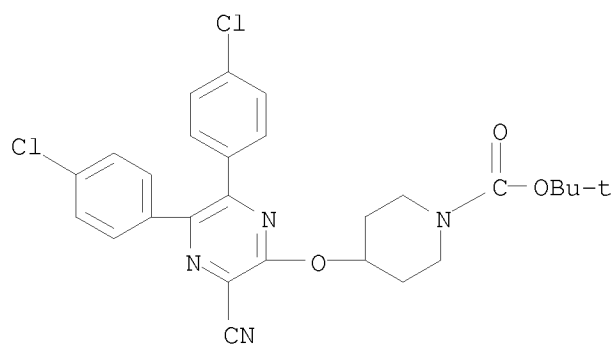
RN 913276-53-6 CAPLUS
 CN Piperidine, 4-[[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]-1-(4-pyridinylcarbonyl)- (9CI) (CA INDEX NAME)



RN 913276-91-2 CAPLUS
 CN 1-Piperidinecarboxylic acid, 4-[[[3-cyano-5,6-bis(4-fluorophenyl)pyrazinyl]oxy]methyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



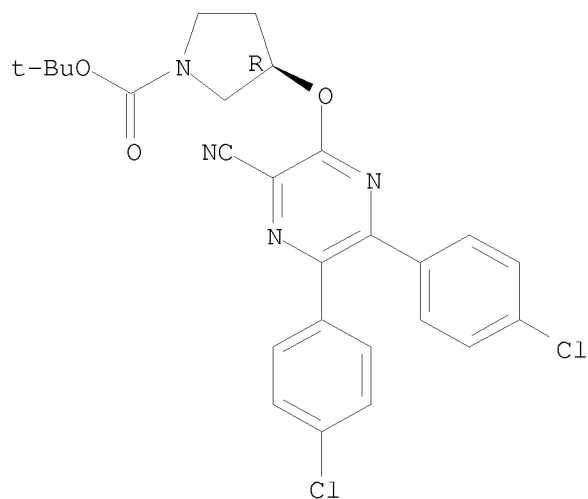
RN 913282-55-0 CAPLUS
 CN 1-Piperidinecarboxylic acid, 4-[[[5,6-bis(4-chlorophenyl)-3-cyanopyrazinyl]oxy]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



RN 913282-56-1 CAPLUS

CN 1-Pyrrolidinecarboxylic acid, 3-[[5,6-bis(4-chlorophenyl)-3-cyanopyrazinyl]oxy]-, 1,1-dimethylethyl ester, (3R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



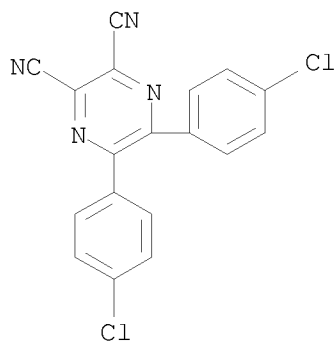
IT 810685-47-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

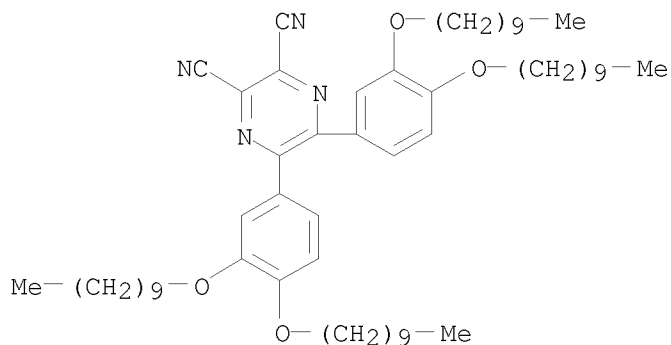
(preparation of substituted heteroaryl compds. useful in treatment of diseases responsive to CB1 activation)

RN 810685-47-3 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-chlorophenyl)- (CA INDEX NAME)



L4 ANSWER 11 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2006:943708 CAPLUS
 DOCUMENT NUMBER: 147:117708
 TITLE: Product class 10: anthraquinone and phenanthrenedione imines and diimines
 AUTHOR(S): Avendano, C.; Menendez, J. C.
 CORPORATE SOURCE: Departamento de Quimica Organica y Farmaceutica, Facultad de Farmacia, Universidad Complutense, Madrid, 28040, Spain
 SOURCE: Science of Synthesis (2006), 28, 735-806
 CODEN: SSCYJ9
 PUBLISHER: Georg Thieme Verlag
 DOCUMENT TYPE: Journal; General Review
 LANGUAGE: English
 AB A review of methods to prepare anthraquinone and phenanthrenedione imines and diimines.
 IT 251480-27-0
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (review of preparation of anthraquinone and phenanthrenedione imines and diimines)
 RN 251480-27-0 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[3,4-bis(decyloxy)phenyl]- (CA INDEX NAME)



REFERENCE COUNT: 182 THERE ARE 182 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE REFORMAT

L4 ANSWER 12 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2006:941086 CAPLUS
 DOCUMENT NUMBER: 145:326346

TITLE: Homeotropically-aligning porphyrazine compounds,
discotic liquid-crystal film from them, conductors and
semiconductors having the film, and electronic devices
INVENTOR(S): Ota, Kazuchika
PATENT ASSIGNEE(S): Shinshu University, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 23pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006241124	A	20060914	JP 2005-62783	20050307
PRIORITY APPLN. INFO.:			JP 2005-62783	20050307
OTHER SOURCE(S):	MARPAT 145:326346			

GI

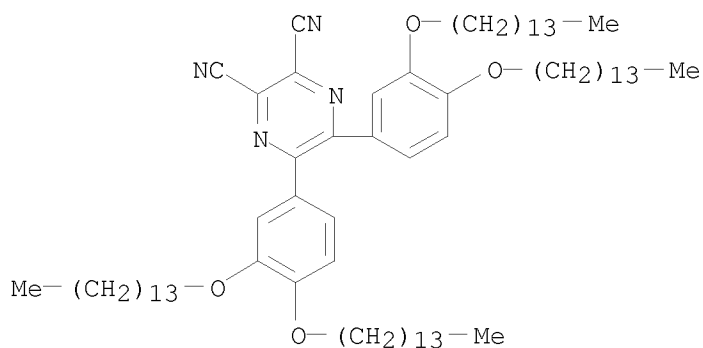
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The compds. I [R = linear, branched, or cyclic hydrocarbyl, poly(oxyethylene) group; M = divalent metal] are made into a discotic liquid crystal film to spontaneously develop homeotropic alignment. Also claimed are conductors and semiconductors having the discotic liquid crystal film on a substrate and electronic devices containing the conductors or the semiconductors, e.g. solar cells, charge-transporting layer of organic electroluminescent devices, charge injection layer of organic lasers, IC tags, gas sensors, optical memory devices, photoconductors for optical imaging devices, etc. I show homogeneous homeotropic alignment in a wide area between room temperature and m.p. or decomposition point and are free from alignment defects.

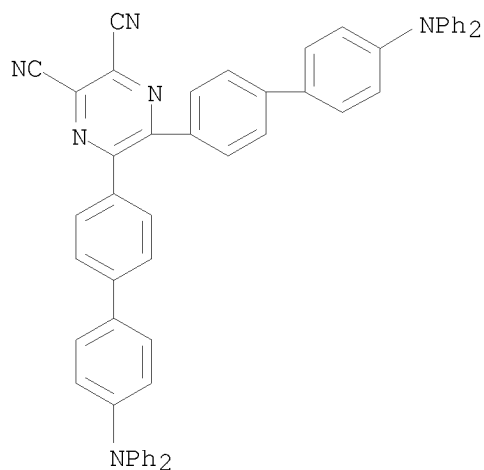
IT 909301-36-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(homeotropically-aligning porphyrazine compds., discotic liquid-crystal film from them, and conductors and semiconductors having the film for electronic devices)

RN 909301-36-6 CAPLUS

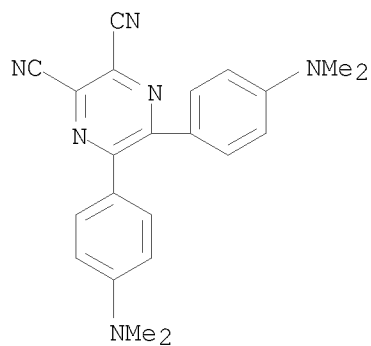
CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[3,4-bis(tetradecyloxy)phenyl]- (CA INDEX NAME)



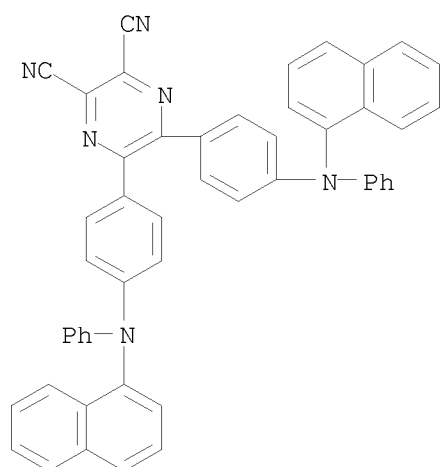
ACCESSION NUMBER: 2006:903926 CAPLUS
 DOCUMENT NUMBER: 146:228844
 TITLE: New fluorescent dipolar pyrazine derivatives for non-doped red organic light-emitting diodes
 AUTHOR(S): Gao, Baoxiang; Zhou, Quanguo; Geng, Yanhou; Cheng, Yanxiang; Ma, Dongge; Xie, Zhiyuan; Wang, Lixiang; Wang, Fosong
 CORPORATE SOURCE: State Key Laboratory of Polymer Physics and Chemistry, Changchun Institute of Applied Chemistry, Graduate School of the Chinese Academy of Sciences, Chinese Academy of Sciences, Changchun, 130022, Peop. Rep. China
 SOURCE: Materials Chemistry and Physics (2006), 99(2-3), 247-252
 CODEN: MCHPDR; ISSN: 0254-0584
 PUBLISHER: Elsevier B.V.
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Dipolar fluorescent compds. containing electron-accepting pyrazine-2,3-dicarbonitrile and electron-donating arylamine moiety have been designed and synthesized. The optical and electrochem. properties of these compds. can be adjusted by changing π -bridge length and the donor (D) strength. Organic light-emitting devices based on these compds. are fabricated.
 Saturated red emission of (0.67, 0.33) and the external quantum efficiency as high as 1.41% have been demonstrated for one of these compds.
 IT 878393-95-4P 888947-50-0P 898546-75-3P
 924727-47-9P 924727-48-0P 924727-49-1P
 924727-50-4P 924727-51-5P
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (fluorescent dipolar pyrazine derivs. for non-doped red organic light-emitting diodes)
 RN 878393-95-4 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]- (CA INDEX NAME)



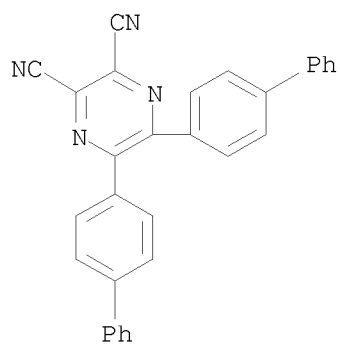
RN 888947-50-0 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(dimethylamino)phenyl]- (CA INDEX NAME)



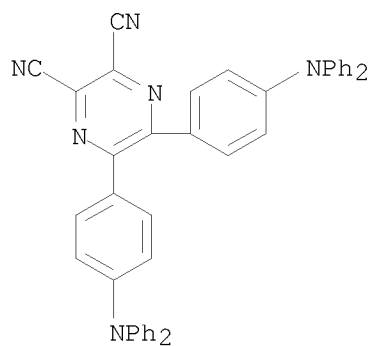
RN 898546-75-3 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(1-naphthalenylphenylamino)phenyl]-
 (CA INDEX NAME)



RN 924727-47-9 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis([1,1'-biphenyl]-4-yl)- (CA INDEX
 NAME)

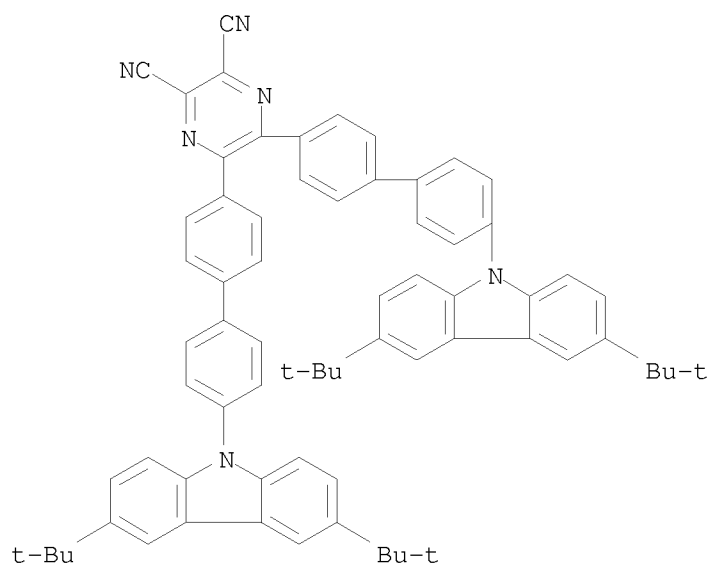


RN 924727-48-0 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(diphenylamino)phenyl]- (CA INDEX
 NAME)



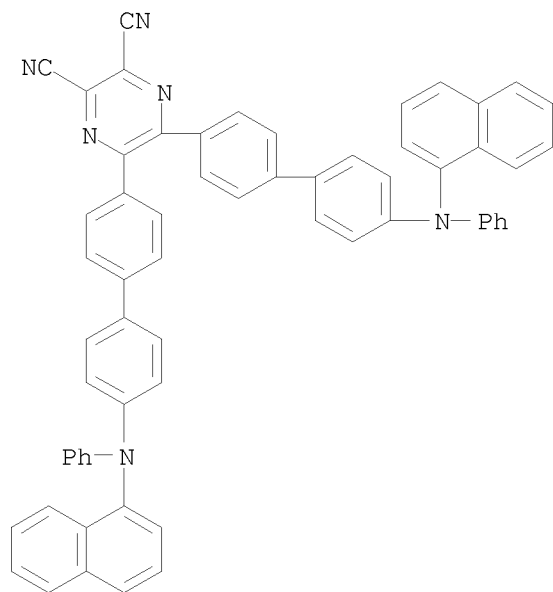
RN 924727-49-1 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4'-[3,6-bis(1,1-dimethylethyl)-9H-carbazol-9-yl]][1,1'-biphenyl]-4-yl]- (CA INDEX NAME)

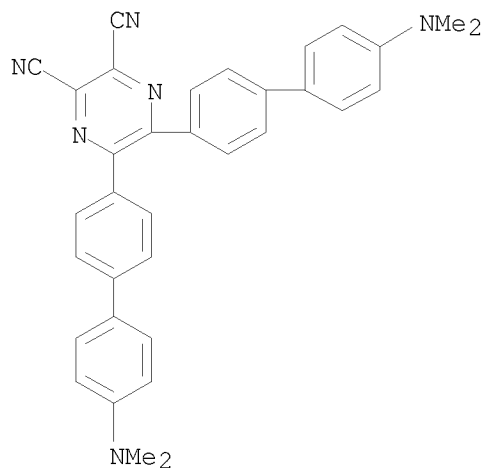


RN 924727-50-4 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4'-(1-naphthalenylphenylamino)][1,1'-biphenyl]-4-yl]- (CA INDEX NAME)



RN 924727-51-5 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4'-(dimethylamino)[1,1'-biphenyl]-4-yl]- (CA INDEX NAME)



REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 14 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2006:827360 CAPLUS
 DOCUMENT NUMBER: 146:215346
 TITLE: Dibenzothiophene/oxide and quinoxaline/pyrazine derivatives serving as electron-transport materials
 AUTHOR(S): Huang, Tai-Hsiang; Whang, Wha-Tzong; Shen, Jiun Yi; Wen, Yuh-Sheng; Lin, Jiann T.; Ke, Tung-Huei; Chen, Li-Yin; Wu, Chung-Chih
 CORPORATE SOURCE: Department of Materials Science and Engineering, National Chiao Tung University, Hsin Chu, 300, Taiwan
 SOURCE: Advanced Functional Materials (2006), 16(11), 1449-1456

CODEN: AFMDC6; ISSN: 1616-301X

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

AB 2,8-Disubstituted dibenzothiophene and 2,8-disubstituted dibenzothiophene-S,S-dioxide derivs. containing quinoxaline and pyrazine moieties were synthesized via three key steps: (i) palladium-catalyzed Sonogashira coupling reaction to form dialkynes; (ii) conversion of the dialkynes to diones; and (iii) condensation of the diones with diamines. Single-crystal characterization of 2,8-di(6,7-dimethyl-3-phenyl-2-quinoxaliny)-5H-5λ6-dibenzo[b,d]thiophene-5,5-dione indicates a triclinic crystal structure with space group P1 and a noncoplanar structure. These new materials are amorphous, with glass-transition temps. ranging from 132 to 194°. (Cpd) exhibit high electron mobilities and serve as effective electron-transport materials for organic light-emitting devices. Double-layer devices are fabricated with the structure indium tin oxide (ITO)/Qn/Cpd/LiF/Al, where yellow-emitting 2,3-bis[4-(N-phenyl-9-ethyl-3-carbazolylamino)phenyl]quinoxaline (Qn) serves as the emitting layer. An external quantum efficiency of 1.41 %, a power efficiency of 4.94 lm W⁻¹, and a current efficiency of 1.62 cd A⁻¹ are achieved at a c.d. of 100 mA cm⁻².

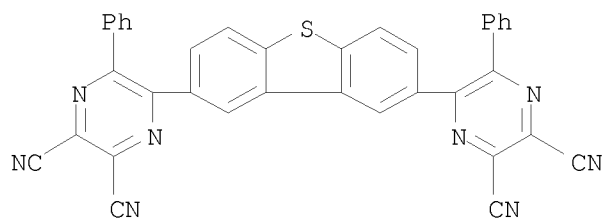
IT 923605-43-0 923605-45-2

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(dibenzothiophene/oxide and quinoxaline/pyrazine derivs. serving as electron-transport materials for electroluminescent materials for organic LED)

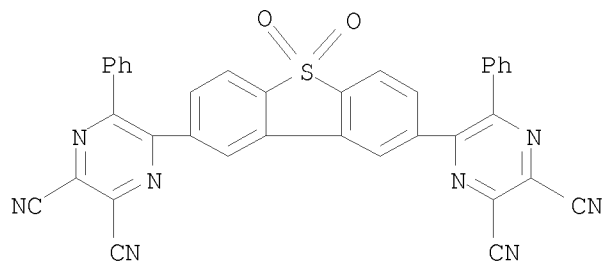
RN 923605-43-0 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,5'-(2,8-dibenzothiophenediyl)bis[6-phenyl- (CA INDEX NAME)



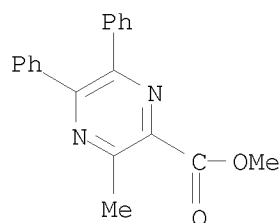
RN 923605-45-2 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,5'-(5,5-dioxido-2,8-dibenzothiophenediyl)bis[6-phenyl- (CA INDEX NAME)

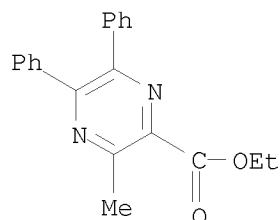


REFERENCE COUNT: 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

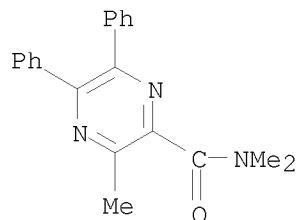
ACCESSION NUMBER: 2006:646507 CAPLUS
 DOCUMENT NUMBER: 145:271733
 TITLE: Straightforward Access to Pyrazines, Piperazinones, and Quinoxalines by Reactions of 1,2-Diaza-1,3-butadienes with 1,2-Diamines under Solution, Solvent-Free, or Solid-Phase Conditions
 AUTHOR(S): Aparicio, Domitila; Attanasi, Orazio A.; Filippone, Paolino; Ignacio, Roberto; Lillini, Samuele; Mantellini, Fabio; Palacios, Francisco; de Santos, Jesus M.
 CORPORATE SOURCE: Istituto di Chimica Organica, Universita degli Studi di Urbino Carlo Bo, Urbino, 61029, Italy
 SOURCE: Journal of Organic Chemistry (2006), 71(16), 5897-5905
 CODEN: JOCEAH; ISSN: 0022-3263
 PUBLISHER: American Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 145:271733
 AB The preparation of tetrahydropyrazines, dihydropyrazines, pyrazines, piperazinones, and quinoxalines by 1,4-addition of 1,2-diamines to 1,2-diaza-1,3-butadienes bearing carboxylate, carboxamide, or phosphorylated groups at the terminal carbon and subsequent internal heterocyclization is described. The solvent-free reaction of carboxylated 1,2-diaza-1,3-butadienes with the same reagents affords piperazinones, while phosphorylated 1,2-diaza-1,3-butadienes yield phosphorylated pyrazines. The solid-phase reaction of polymer-bound 1,2-diaza-1,3-butadienes with 1,2-diamines produces pyrazines.
 IT 861822-36-8P 861822-37-9P 907161-24-4P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of pyrazines, piperazinones, and quinoxalines by 1,4-addition/heterocyclization of 1,2-diaza-1,3-butadienes with 1,2-diamines under solution, solvent-free, or solid-phase conditions)
 RN 861822-36-8 CAPLUS
 CN Pyrazinecarboxylic acid, 3-methyl-5,6-diphenyl-, methyl ester (9CI) (CA INDEX NAME)



RN 861822-37-9 CAPLUS
 CN Pyrazinecarboxylic acid, 3-methyl-5,6-diphenyl-, ethyl ester (9CI) (CA INDEX NAME)



RN 907161-24-4 CAPLUS
CN Pyrazinecarboxamide, N,N,3-trimethyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 108 THERE ARE 108 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE REFORMAT

L4 ANSWER 16 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2006:476931 CAPLUS

DOCUMENT NUMBER: 145:155575

TITLE: High-performance organic red-light-emitting devices based on a greenish-yellow-light-emitting host and long-wavelength emitting dopant

AUTHOR(S): Chew, Siewling; Wang, Pengfei; Hong, Zirou; Tao, Silu; Tang, Jianxin; Lee, Chun Sing; Wong, Ning Bew; Kwong, Hoilun; Lee, Shuit-Tong

CORPORATE SOURCE: Center of Super-Diamond and Advanced Films (COSDAF), Department of Physics and Materials Science, City University of Hong Kong, Hong Kong SAR, Peop. Rep. China

SOURCE: Applied Physics Letters (2006), 88(18), 183504/1-183504/3

CODEN: APPLAB; ISSN: 0003-6951

PUBLISHER: American Institute of Physics

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The authors demonstrated an organic red-light-emitting device (ORLED) using a host, 5,6-bis-[4-(naphthalene-1-yl-phenyl-amino)-phenyl]-pyrazine-2,3-dicarbonitrile (BNPPDC), and a dopant, 2,3-bis[[(2-hydroxy-4-diethylamino)phenyl](methylene)]amino]-2-butanedinitrile (BDPMB). The device achieved a brightness of 9730 cd/m² at a 11 V, a power efficiency of 2.35lm/W, a current efficiency of 3.36 cd/A at 4.5 V, and a low turn-on voltage of 3.0 V, with nearly saturated red emission. The device is superior or equal to the best fluorescent ORLEDs reported. BNPPDC generally induced a significant blueshift in dopant emission, thus it may serve as a host for dopants emitting at long wavelengths in ORLEDs with improved performance.

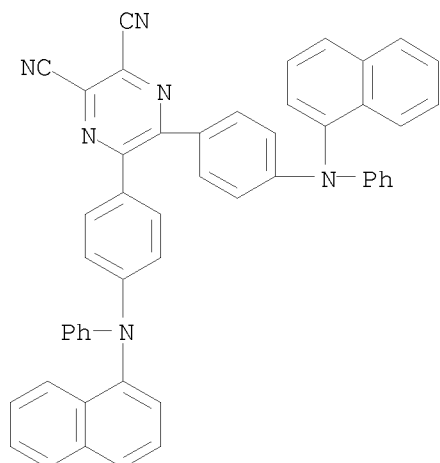
IT 898546-75-3

RL: DEV (Device component use); PRP (Properties); USES (Uses)

(high-performance organic red LEDs based on greenish-yellow-light-emitting host and long-wavelength emitting dopant)

RN 898546-75-3 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(1-naphthalenylphenylamino)phenyl]- (CA INDEX NAME)



REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 17 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2006:196490 CAPLUS

DOCUMENT NUMBER: 144:412459

TITLE: Synthesis of amino- and bis(bromomethyl)-substituted bi- and tetradentate N-heteroaromatic ligands: building blocks for pyrazino-functionalized fullerene dyads

AUTHOR(S): Kleineweischede, Andreas; Mattay, Jochen

CORPORATE SOURCE: Organische Chemie I, Fakultät fuer Chemie, Universitaet Bielefeld, Bielefeld, 33501, Germany

SOURCE: European Journal of Organic Chemistry (2006), (4), 947-957

CODEN: EJOCFK; ISSN: 1434-193X

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 144:412459

AB The synthesis of amino- and bis(bromomethyl)-substituted phenanthrolines, pyrazino[2,3-f]phenanthrolines, dipyrido[3,2-a:2',3'-c]phenazines, pyrazino[2,3-i]dipyrido[3,2-a:2',3'-c]phenazines, 2,3-bis(2-pyridyl)pyrazines, 2,3-bis(2-pyridyl)quinoxalines and 7,8-bis(2-pyridyl)pyrazino[2,3-g]quinoxalines is reported. These substituted bi- and tetradentate N-heteroarom. ligands are potential synthons for the preparation of fullerene ligands. The diketones, 1,10-phenanthroline-5,6-dione, 2,2'-pyridil, and 1,4-dibromo-2,3-butanedione were used as starting materials.

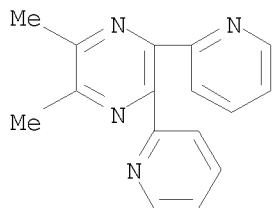
IT 89684-66-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

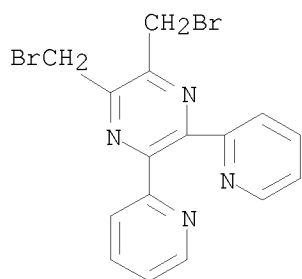
(preparation of amino- and bis(bromomethyl)-substituted bi- and tetradentate N-heteroarom. ligands as building blocks for pyrazino-functionalized fullerene dyads)

RN 89684-66-2 CAPLUS

CN Pyrazine, 2,3-dimethyl-5,6-di-2-pyridinyl- (CA INDEX NAME)



IT 883875-23-8P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of amino- and bis(bromomethyl)-substituted bi- and tetradentate
 N-heteroarom. ligands as building blocks for pyrazino-functionalized
 fullerene dyads)
 RN 883875-23-8 CAPLUS
 CN Pyrazine, 2,3-bis(bromomethyl)-5,6-di-2-pyridinyl- (CA INDEX NAME)



REFERENCE COUNT: 55 THERE ARE 55 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

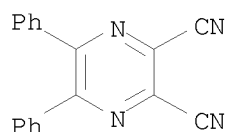
L4 ANSWER 18 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2005:1253090 CAPLUS
 DOCUMENT NUMBER: 143:471970
 TITLE: Cobalt octasulfooctaphenyltetrapyrazinoporphyrazine
 INVENTOR(S): Shishkin, V. N.; Kudrik, E. V.; Shaposhnikov, G. P.;
 Makarov, S. V.
 PATENT ASSIGNEE(S): Gosudarstvennoe Obrazovatel'noe Uchrezhdenie Vysshego
 Professional'nogo Obrazovaniya "Ivanovskii Gos.
 Khim.-Tekhnol. Univ.", Russia
 SOURCE: Russ., 6 pp.
 CODEN: RUXXE7
 DOCUMENT TYPE: Patent
 LANGUAGE: Russian
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RU 2265026	C1	20051127	RU 2004-121447	20040713

PRIORITY APPLN. INFO.: RU 2004-121447 20040713

AB The invention relates to preparing tetrapyrazinoporphyrazine derivs. namely,
 to CoL (I; H2L = octasulfooctaphenyltetrapyrazinoporphyrazine) that can be
 used as a catalyst in oxidation reactions of S-containing compds., in
 particular,
 cysteine and thioureas, and diethylamine also being both in acid and
 neutral media. I was prepared by the reaction of diaminomaleodinitrile with
 benzil, followed by cyclocondensation in presence of Co(OAc)2 and
 subsequent sulfonylation. I was used as an oxidation catalyst of cysteine,

thioureas and Et₂NH.
 IT 52197-23-6P, 5,6-Diphenyl-2,3-dicyanopyrazine
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (preparation and reactant for preparation of cobalt
 octasulfooctaphenyltetrapyrroz
 inoporphyrizine)
 RN 52197-23-6 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)



L4 ANSWER 19 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2005:1225418 CAPLUS
 DOCUMENT NUMBER: 144:141227
 TITLE: Tetra-2,3-pyrazinoporphyrizines with Externally
 Appended Pyridine Rings. 4. UV-Visible Spectral and
 Electrochemical Evidence of the Remarkable
 Electron-Deficient Properties of the New
 Tetrakis-2,3-[5,6-di{2-(N-
 methyl)pyridiniumyl}pyrazino]porphyrizinatometal
 Octacations, [(2-Mepy)8TPyzPzM]⁸⁺ (M = MgII(H₂O),
 CoII, CuII, ZnII)
 AUTHOR(S): Bergami, Costanza; Donzello, Maria Pia; Monacelli,
 Fabrizio; Ercolani, Claudio; Kadish, Karl M.
 CORPORATE SOURCE: Dipartimento di Chimica, Universita degli Studi di
 Roma La Sapienza, Rome, I-00185, Italy
 SOURCE: Inorganic Chemistry (2005), 44(26), 9862-9873
 CODEN: INOCAJ; ISSN: 0020-1669
 PUBLISHER: American Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 144:141227
 AB Metal derivs. of the octacationic tetrakis-2,3-[5,6-di{2-(N-
 methyl)pyridiniumyl}pyrazino]porphyrizine macrocycle [(2-Mepy)8TPyzPzH₂]⁸⁺
 (2-Mepy = 2-(N-methyl)pyridiniumyl ring) isolated as water-soluble hydrated
 iodide salts [(2-Mepy)8TPyzPzM](I₈)·xH₂O, (M = MgII(H₂O), CoII,
 CuII, ZnII; x = 2-5) were prepared from the corresponding neutral complexes
 [Py8TPyzPzM]·xH₂O previously reported. Reaction of these complexes
 with CH₃I in DMF under mild conditions led to full quaternization of all
 eight pyridine N atoms and formation of the octacations
 [(2-Mepy)8TPyzPzM]⁸⁺. Clathrated H₂O mols. could be eliminated from
 [(2-Mepy)8TPyzPzM](I₈)·xH₂O by mild heating (≤100°)
 under vacuum, but the unsolvated species which were formed tended to
 rehydrate when exposed to air. Magnetic susceptibility measurements and
 EPR spectra prove that the CuII and CoII complexes in the solid state are
 both paramagnetic with one unpaired electron, thus giving a low-spin state
 CoII for the latter compound. Studies of the charged species
 [(2-Mepy)8TPyzPzM]⁸⁺ in aqueous media at .apprx.10⁻⁵ M concentration provide
 evidence
 for the occurrence of mol. aggregation, similar to what is seen for the
 related free-base species [(2-Mepy)8TPyzPzH₂]⁸⁺ (see part 3 of this
 series, preceding paper in this issue), but the formation of monomeric
 species is generally favored upon dilution of the solns. The same
 octacations are essentially monomeric in solns. of pyridine or DMSO, but

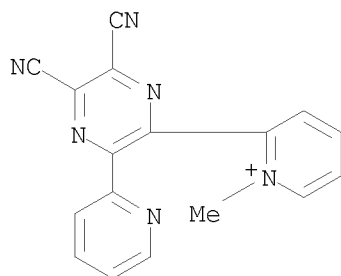
traces of aggregation, if occasionally present, vanish with the time. Changes in the UV-visible spectra are observed in the Q- and B-band regions as a result of the quaternization at the pyridine N atoms. Cyclic voltammetry and thin-layer spectroelectrochem. data in DMSO show well-resolved reversible multistep 1-electron redns. for both the unmethylated and methylated complexes, all of which appear to be ligand-centered, the only exception being reduction of the CoII complex. For this species, the 1st 1-electron reduction is a metal-centered CoII → CoI process, but the site of electron transfer is reversed and the final product upon a further 1-electron reduction is formulated as a CoII dianion as opposed to a CoI π -anion radical. This sequence is similar to what was earlier reported for reduction of the same compound in pyridine. Reversible 1-electron oxidns. are also observed for the unmethylated species [Py8TPyzPzM]·xH₂O where M = CoII and MnII in DMSO. Remarkably, the octacationic macrocycles [(2-Mepy)8TPyzPzM](18)·xH₂O, (M = MgII(H₂O), CoII, CuII, and ZnII; x = 2-5) are more easily reduced at any step of the reduction than the corresponding unquaternized species with the same metal ion. This indicates a higher tendency to stepwise electron uptake after the quaternization process, which enhances the charge redistribution capability within the species formed by the electroredn.

IT 873438-61-0 873438-63-2 873438-65-4

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(cyclic voltammetry of)

RN 873438-61-0 CAPLUS

CN Pyridinium, 2-[5,6-dicyano-3-(2-pyridinyl)pyrazinyl]-1-methyl-, iodide (9CI) (CA INDEX NAME)



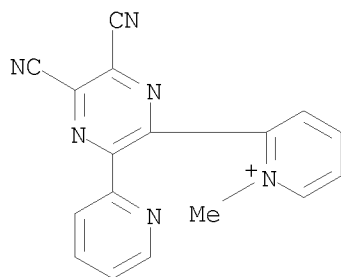
RN 873438-63-2 CAPLUS

CN Pyridinium, 2-[5,6-dicyano-3-(2-pyridinyl)pyrazinyl]-1-methyl-, salt with 4-methylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 873438-62-1

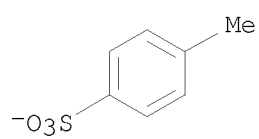
CMF C17 H11 N6



CM 2

CRN 16722-51-3

CMF C7 H7 O3 S



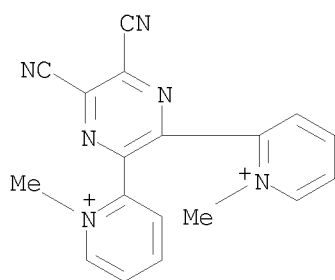
RN 873438-65-4 CAPLUS

CN Pyridinium, 2,2'-(5,6-dicyano-2,3-pyrazinediyl)bis[1-methyl-, salt with 4-methylbenzenesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 873438-64-3

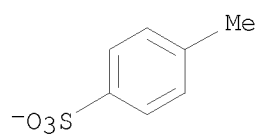
CMF C18 H14 N6



CM 2

CRN 16722-51-3

CMF C7 H7 O3 S



REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 20 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2005:1225417 CAPLUS

DOCUMENT NUMBER: 144:141226

TITLE: Tetra-2,3-pyrazinoporphyrazines with Externally Appended Pyridine Rings. 3. A New Highly Electron-Deficient Octacationic Macrocyclc: Tetrakis-2,3-[5,6-di{2-(N-methyl)pyridiniumyl}pyrazino]porphyrazine, [(2-Mepy)8TPyzPzH2]8+

AUTHOR(S): Bergami, Costanza; Donzello, Maria Pia; Ercolani, Claudio; Monacelli, Fabrizio; Kadish, Karl M.; Rizzoli, Corrado

CORPORATE SOURCE: Dipartimento di Chimica, Universita degli Studi di Roma La Sapienza, Rome, I-00185, Italy

SOURCE: Inorganic Chemistry (2005), 44(26), 9852-9861
CODEN: INOCAJ; ISSN: 0020-1669

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 144:141226

AB A new octacationic macrocycle, tetrakis-2,3-[5,6-di{2-(N-methyl)pyridiniumyl}pyrazino]porphyrazine, was obtained in its hydrated form as the water-soluble iodide salt. This compound, abbreviated as [(2-Mepy)8TPyzPzH2](I8)·8H2O (2-Mepy = 2(N-methyl)pyridiniumyl moiety), was obtained by demetalation of the corresponding MgII complex, [(2-Mepy)8TPyzPzMg(H2O)](I8)·5H2O, which in turn was prepared from its corresponding neutral hydrated species tetrakis-2,3-[5,6-di(2-pyridyl)pyrazino]porphyrazinato(monoaquo)magnesium(II), [Py8TPyzPzMg(H2O)]·4H2O, by reaction with CH3I in DMF. The quaternization reactions by using CH3I or Me p-toluenesulfonate were also conducted on the monomeric precursor 2,3-dicyano-5,6-di(2-pyridyl)-1,4-pyrazine, [(CN)2Py2Pyz], with formation of the monoquaternized ion [(CN)2Py(2-Mepy)Pyz]+ neutralized by iodide and p-toluenesulfonate anions. Single-crystal x-ray work allowed elucidation of the structure of the two salt-like species. The diquaternized ion [(CN)2(2-Mepy)2Pyz]2+ could also be obtained as a p-toluenesulfonate salt, but attempts at direct macrocyclization of this dicationic species were unsuccessful. The iodide salt [(2-Mepy)8TPyzPzH2](I8)·8H2O is water-soluble, with different solubilities depending on the range of pH explored. The macrocycle [(2-Mepy)8TPyzPzH2]8+ undergoes facile deprotonation and behaves as a strong acid. Aggregation phenomena are observed for both the octacation [(2-Mepy)8TPyzPzH2]8+ and its corresponding centrally deprotonated species [(2-Mepy)8TPyzPz]6+. Nevertheless, both cationic moieties exist in their monomeric form under specific exptl. conditions. UV-visible monitored titrns. with NaOH provide information about the type of protonation/deprotonation equilibrium which are complicated by the occurrence of aggregation phenomena.

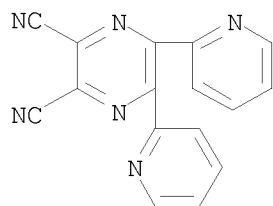
IT 118553-90-5

RL: RCT (Reactant); RACT (Reactant or reagent)

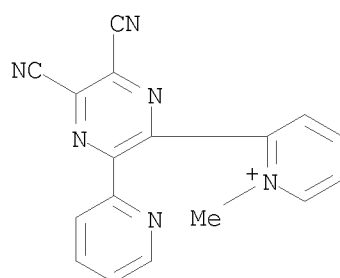
(for preparation of monoquaternized N-methyl-dicyano-5,6-di(2-pyridyl)-1,4-pyrazine)

RN 118553-90-5 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-di-2-pyridinyl- (CA INDEX NAME)



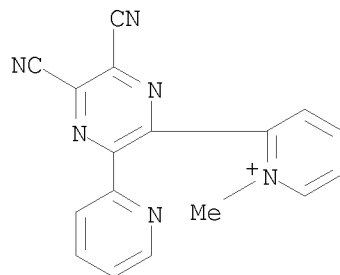
IT 873438-61-0P 873438-63-2P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (preparation and crystal structure of)
 RN 873438-61-0 CAPLUS
 CN Pyridinium, 2-[5,6-dicyano-3-(2-pyridinyl)pyrazinyl]-1-methyl-, iodide
 (9CI) (CA INDEX NAME)



RN 873438-63-2 CAPLUS
 CN Pyridinium, 2-[5,6-dicyano-3-(2-pyridinyl)pyrazinyl]-1-methyl-, salt with
 4-methylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

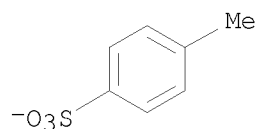
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CRN 873438-62-1
 CMF C17 H11 N6



CM 2

CRN 16722-51-3
 CMF C7 H7 O3 S



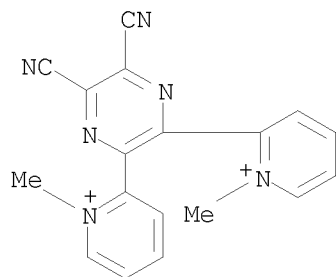
IT 873438-91-6P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
 RN 873438-91-6 CAPLUS
 CN Pyridinium, 2,2'-(5,6-dicyano-2,3-pyrazinediyl)bis[1-methyl-, salt with
 4-methylbenzenesulfonic acid (1:2), tetrahydrate (9CI) (CA INDEX NAME)

CM 1

CRN 873438-65-4
 CMF C18 H14 N6 . 2 C7 H7 O3 S

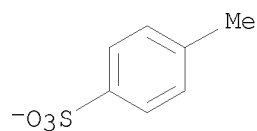
CM 2

CRN 873438-64-3
 CMF C18 H14 N6



CM 3

CRN 16722-51-3
 CMF C7 H7 O3 S



REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 21 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2005:1043744 CAPLUS

DOCUMENT NUMBER: 144:292236

TITLE: Synthesis and characterization of n-type materials for non-doped organic red-light-emitting diodes

AUTHOR(S): Chen, Shiyun; Xu, Xinjun; Liu, Yunqi; Yu, Gui; Sun, Xiaobo; Qiu, Wenfeng; Ma, Yongqiang; Zhu, Daoben

CORPORATE SOURCE: Key Laboratory of Organic Solids, Institute of Chemistry, Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China

SOURCE: Advanced Functional Materials (2005), 15(9), 1541-1546
CODEN: AFMDC6; ISSN: 1616-301X

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

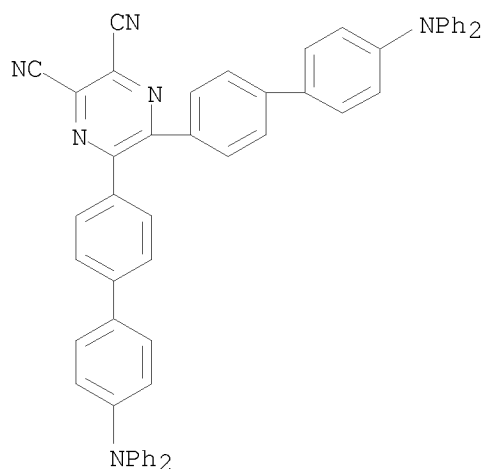
OTHER SOURCE(S): CASREACT 144:292236

AB Two compds., 2,3-dicyano-5,6-di(4'-diphenylamino-biphenyl-4-yl)pyrazine (CAPP) and 6,7-dicyano-2,3-di(4'-diphenylamino-biphenyl-4-yl)quinoxaline (CAPQ), capable of intramol. charge transfer, have been designed and synthesized in high yield by a convenient procedure. The compds. have been fully characterized spectroscopically. They have a high thermal stability and show bright light emission both in non-polar solvents and in the solid state. Moreover, they exhibit excellent reversible oxidation and reduction waves. The higher energy level of the HOMO (-5.3 eV) and the triphenylamine group are advantageous for hole-injection/transport. In addition, the high electron affinities of 3.4 eV and the observed reversible reductive process suggest that these compds. enhance electron injection and have potential for use in electron transport. Three types of non-doped red-light-emitting diodes have been studied using CAPP and CAPQ as the electron-transporting and host-light-emitting layers, resp. The devices exhibit red electroluminescence (EL), and constant Commission Internationale de l'Eclairage coordinates have been observed on increasing the c.d. Pure red EL of CAPP, with a maximum brightness of 536 cd m⁻² and an external quantum efficiency of 0.7 % in ambient air, was achieved.

IT 878393-95-4P
RL: CPS (Chemical process); DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(preparation and characterization of n-type materials for non-doped organic red-light-emitting diodes)

RN 878393-95-4 CAPLUS

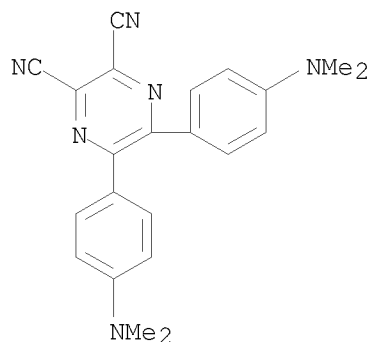
CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]- (CA INDEX NAME)



REFERENCE COUNT: 63 THERE ARE 63 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

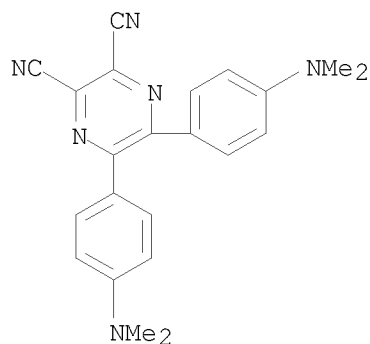
L4 ANSWER 22 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:1032345 CAPLUS

DOCUMENT NUMBER: 145:27964
 TITLE: Synthesis and some properties of 5,6-(4,4'-dimethylaminophenyl)-2,3-dicyanopyrazine and its porphyrazine derivative
 AUTHOR(S): Shishkin, V. N.; Kudrik, E. V.; Shaposhnikov, G. P.
 CORPORATE SOURCE: Ivanov. Gos. Khim.-Tekhnol. Univ., Ivanovo, Russia
 SOURCE: Izvestiya Vysshikh Uchebnykh Zavedenii, Khimiya i Khimicheskaya Tekhnologiya (2004), 47(10), 14-17
 CODEN: IVUKAR; ISSN: 0579-2991
 PUBLISHER: Ivanovskii Gosudarstvennyi Khimiko-Tekhnologicheskii Universitet
 DOCUMENT TYPE: Journal
 LANGUAGE: Russian
 OTHER SOURCE(S): CASREACT 145:27964
 AB The 5,6-(4,4'-dimethylaminophenyl)-2,3-dicyanopyrazine was synthesized in 47% yield by cyclocondensation of diaminomaleonitrile with 4,4'-bis(dimethylamino)benzil. Subsequent Mg-mediated cyclotetramerization of this pyrazine afforded the corresponding porphyrazine in 16% yield. The optical properties and amino-imino tautomerism of the products have been studied.
 IT 888947-52-2P
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (bis(quinoneiminium) tautomer; preparation, optical properties and tautomerism of bis(dimethylaminophenyl)dicyanopyrazine and its porphyrazine derivative)
 RN 888947-52-2 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(dimethylamino)phenyl]-, di(hydrochloride-d) (9CI) (CA INDEX NAME)

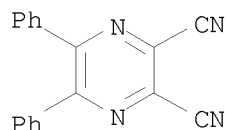


●2 DC1

IT 888947-50-0P
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation, optical properties and tautomerism of bis(dimethylaminophenyl)dicyanopyrazine and its porphyrazine derivative)
 RN 888947-50-0 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(dimethylamino)phenyl]- (CA INDEX NAME)



L4 ANSWER 23 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2005:617964 CAPLUS
 DOCUMENT NUMBER: 144:80012
 TITLE: Iron(II) Octaphenyltetrapyrazinoporphyrazinate Extra
 Complexes: Synthesis and Some Properties
 AUTHOR(S): Kudrik, E. V.; Shishkin, V. N.; Shaposhnikov, G. P.
 CORPORATE SOURCE: Ivanovo State University of Chemistry and Technology,
 Ivanovo, 153000, Russia
 SOURCE: Russian Journal of Coordination Chemistry (2005),
 31(7), 501-505
 CODEN: RJCCEY; ISSN: 1070-3284
 PUBLISHER: Pleiades Publishing, Inc.
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 144:80012
 AB Fe(II) octaphenyltetrapyrazinoporphyrazinate [Fe{PzPh₂}₄PA]·2H₂O
 and its water-soluble sulfo-substituted form [Fe{Pz(4-
 SO₃HPh)₂}₄PA]·2H₂O were synthesized. The effect of pyridine and
 pyrazine ligand coordination on the spectral properties of
 sulfo-substituted Fe(II) porphyrazinate was studied. The EPR and 170 NMR
 methods showed that in an alkaline medium, 1-electron reduction of Fe(II)
 complex
 gave a stable pentacoordinated anionic complex.
 IT 52197-23-6, 5,6-Diphenyl-2,3-dicyanopyrazine
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (for preparation of iron(II) octaphenyltetrapyrazinoporphyrazinate
 complexes)
 RN 52197-23-6 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)



REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 24 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2005:517970 CAPLUS
 DOCUMENT NUMBER: 143:193975
 TITLE: Different behavior of the reaction between
 1,2-diaza-1,3-butadienes and 1,2-diamines under

solvent or solvent-free conditions

AUTHOR(S): Attanasi, Orazio A.; De Crescentini, Lucia; Favi, Gianfranco; Filippone, Paolino; Lillini, Samuele; Mantellini, Fabio; Santeusano, Stefania

CORPORATE SOURCE: Istituto di Chimica Organica della Facolta di Scienze Matematiche, Fisiche e Naturali, Universita degli Studi di Urbino 'Carlo Bo', Urbino, 61029, Italy

SOURCE: Synlett (2005), (9), 1474-1476
CODEN: SYNLES; ISSN: 0936-5214

PUBLISHER: Georg Thieme Verlag

DOCUMENT TYPE: Journal

LANGUAGE: English

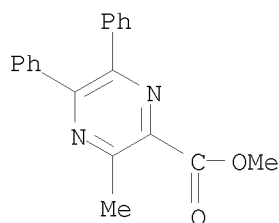
OTHER SOURCE(S): CASREACT 143:193975

AB New piperazinones are obtained in satisfactory yields by reaction of 1,2-diaza-1,3-butadienes with 1,2-diamines under solvent-free conditions. In polar solvents, the same reagents give rise to interesting dihydropyrazines and then to pyrazines by oxidation with PTAB or Pd/C.

IT 861822-36-8P 861822-37-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of piperazinones by reaction of 1,2-diaza-1,3-butadienes with 1,2-diamines under solvent or solvent-free conditions)

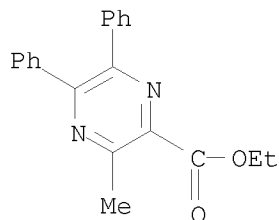
RN 861822-36-8 CAPLUS

CN Pyrazinecarboxylic acid, 3-methyl-5,6-diphenyl-, methyl ester (9CI) (CA INDEX NAME)



RN 861822-37-9 CAPLUS

CN Pyrazinecarboxylic acid, 3-methyl-5,6-diphenyl-, ethyl ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 25 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2005:493608 CAPLUS

DOCUMENT NUMBER: 143:43904

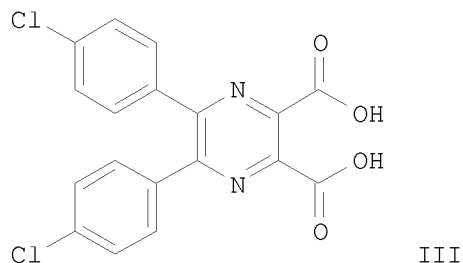
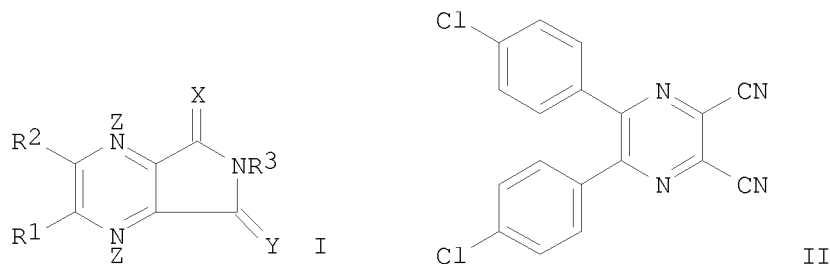
TITLE: Preparation of pyrrolo[3,4-b]pyrazine-5,7(6H)-dione derivatives for treating obesity, psychiatric, and neurological disorders

INVENTOR(S): Cheng, Leifeng

PATENT ASSIGNEE(S): Astrazeneca AB, Swed.; Astrazeneca UK Limited

SOURCE: PCT Int. Appl., 26 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

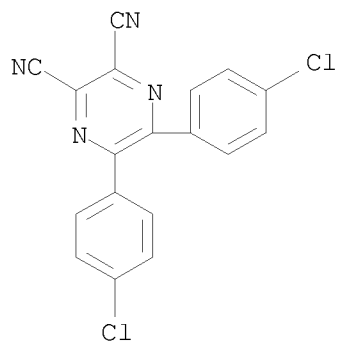
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005051953	A2	20050609	WO 2004-GB4934	20041124
WO 2005051953	A3	20050728		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2004292493	A1	20050609	AU 2004-292493	20041124
CA 2546318	A1	20050609	CA 2004-2546318	20041124
EP 1701958	A2	20060920	EP 2004-798641	20041124
EP 1701958	B1	20070502		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, HR, IS				
CN 1886405	A	20061227	CN 2004-80034802	20041124
AT 361301	T	20070515	AT 2004-798641	20041124
JP 2007512298	T	20070517	JP 2006-540602	20041124
ES 2285544	T3	20071116	ES 2004-4798641	20041124
IN 2006DN02621	A	20070824	IN 2006-DN2621	20060510
US 2007099923	A1	20070503	US 2006-579830	20060517
HK 1096670	A1	20071012	HK 2007-101236	20070201
PRIORITY APPLN. INFO.:			GB 2003-27331	A 20031125
			WO 2004-GB4934	W 20041124
OTHER SOURCE(S):			CASREACT 143:43904; MARPAT 143:43904	
GI				



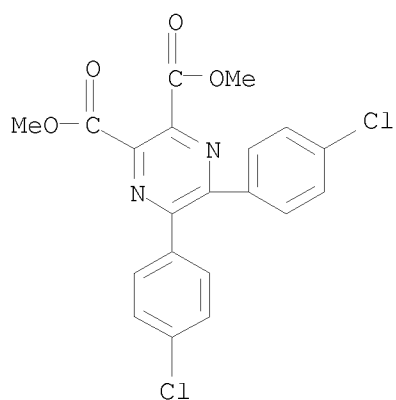
AB The title compds. I [R1, R2 = Ph, thienyl, pyridyl, C1-C10-alkyl, C1-C10-alkoxy, C3-C15-cycloalkyl; R3 = C1-C15-alkyl, C3-C15-cycloalkyl, phenylC1-C4-alkyl, heteroaryl, heteroarylC1-C4-alkyl, R4(CH2)n, R4 = heterocycle, n = 0-4; X, Y = O, S; Z = (O)n, n = 0, 1] were prepared and are designed to be used in the treatment of obesity, psychiatric disorders, neurol. disorders, immune, cardiovascular, reproductive, and endocrine disorders, septic shock, diseases related to respiratory and gastrointestinal systems, and extended abuse, addiction and/or relapse indications. As an example, 1,2-bis(4-chlorophenyl)ethane-1,2-dione reacted with diaminomaleonitrile to give pyrazine-2,3-dicarbonitrile II which was treated with KOH/H2O2 in H2O, esterified, and hydrolyzed to give dicarboxylic acid III. III condensed with 4-FC6H4CH2NH2 to give the mono-amide which cyclized to give the desired compound I (R1 = R2 = 4-ClC6H4, R3 = 4-FC6H4CH2, X = Y = O, Z = none).

IT 810685-47-3P, 5,6-Bis(4-chlorophenyl)pyrazine-2,3-dicarbonitrile
 810685-48-4P 810685-49-5P, 5,6-Bis(4-chlorophenyl)pyrazine-2,3-dicarboxylic acid 811441-51-7P,
 5,6-Bis(4-chlorophenyl)-3-[(piperidin-1-ylamino)carbonyl]pyrazine-2-carboxylic acid 853578-19-5P 853578-23-1P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation of pyrrolo[3,4-b]pyrazine-5,7(6H)-dione derivs. for treating obesity, psychiatric, neurol., immune, cardiovascular, reproductive, and endocrine disorders, septic shock, respiratory and gastrointestinal disorders)

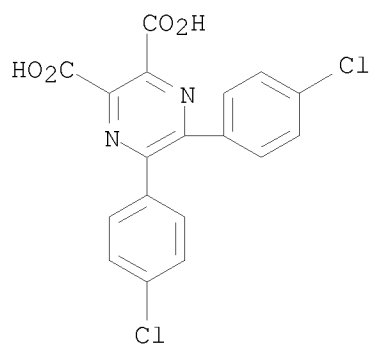
RN 810685-47-3 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-chlorophenyl)- (CA INDEX NAME)



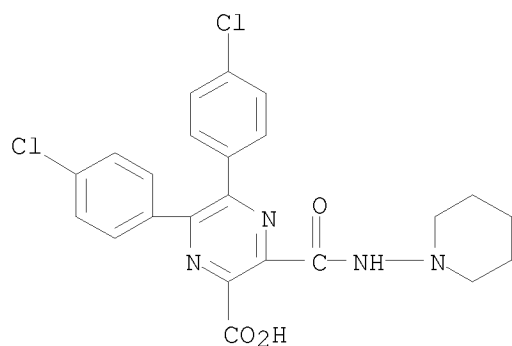
RN 810685-48-4 CAPLUS
 CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)-, dimethyl ester
 (9CI) (CA INDEX NAME)



RN 810685-49-5 CAPLUS
 CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)- (CA INDEX NAME)

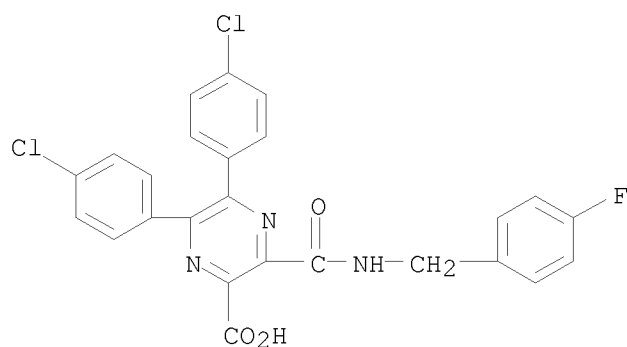


RN 811441-51-7 CAPLUS
 CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(1-piperidinylamino)carbonyl]- (9CI) (CA INDEX NAME)



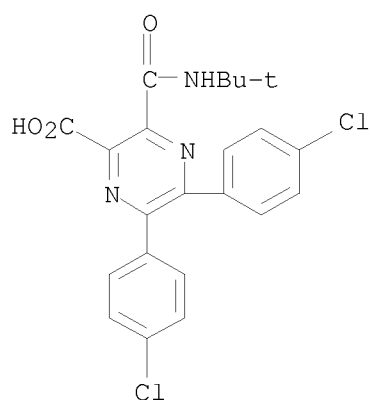
RN 853578-19-5 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[[(4-fluorophenyl)methyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



RN 853578-23-1 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[[(1,1-dimethylethyl)amino]carbonyl]- (9CI) (CA INDEX NAME)



L4 ANSWER 26 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

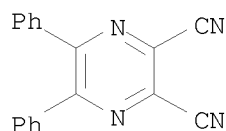
ACCESSION NUMBER: 2005:170021 CAPLUS

DOCUMENT NUMBER: 142:470169

TITLE: Kinetics and mechanism of the Co(II)-assisted oxidation of thioureas by dioxygen

AUTHOR(S): Kudrik, Evgeny V.; Theodoridis, Alexander; van Eldik,

CORPORATE SOURCE: Rudi; Makarov, Sergei V.
 Institute for Inorganic Chemistry, University of
 Erlangen-Nuernberg, Erlangen, 91058, Germany
 SOURCE: Dalton Transactions (2005), (6), 1117-1122
 CODEN: DTARAF; ISSN: 1477-9226
 PUBLISHER: Royal Society of Chemistry
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Catalytic oxidation of N,N'-dimethylthiourea and thiourea by dioxygen in
 water using a new cobalt(II) complex of octasulfophenyltetrapyrazinoporphy
 razine was performed under mild conditions. The reaction is shown to
 include the formation of an intermediate anionic five-coordinate complex
 followed by an unusual two-electron oxidation to produce the corresponding
 urea and elemental sulfur (S8). Kinetic and thermodyn. parameters for the
 different reaction steps of the process were determined Drastic differences in
 catalytic activity of cobalt and iron octasulfophenyltetrapyrazinoporphyra
 zines were observed
 IT 52197-23-6, 2,3-Dicyano-5,6-diphenylpyrazine
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (kinetics and mechanism of the Co(II)-assisted oxidation of thioureas by
 dioxygen)
 RN 52197-23-6 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)

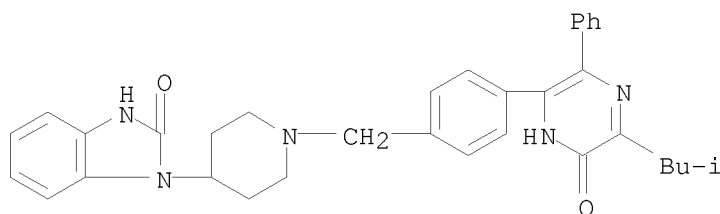


REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

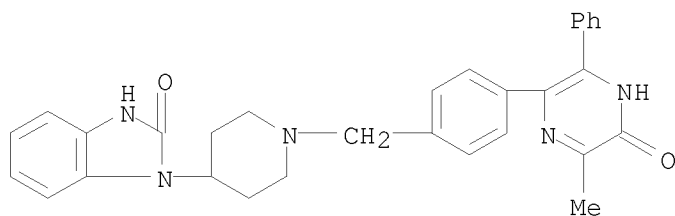
L4 ANSWER 27 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2005:133800 CAPLUS
 DOCUMENT NUMBER: 142:403601
 TITLE: Tumor cell sensitization to apoptotic stimuli by
 selective inhibition of specific Akt/PKB family
 members
 AUTHOR(S): DeFeo-Jones, Deborah; Barnett, Stanley F.; Fu, Sheng;
 Hancock, Paula J.; Haskell, Kathleen M.; Leander,
 Karen R.; McAvoy, Elizabeth; Robinson, Ronald G.;
 Duggan, Mark E.; Lindsley, Craig W.; Zhao, Zhijian;
 Huber, Hans E.; Jones, Raymond E.
 CORPORATE SOURCE: Department of Cancer Research and Technology Enabled
 Synthesis Group, Department of Medicinal Chemistry,
 Merck Research Laboratories, West Point, PA, USA
 SOURCE: Molecular Cancer Therapeutics (2005), 4(2), 271-279
 CODEN: MCTOCF; ISSN: 1535-7163
 PUBLISHER: American Association for Cancer Research
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Recent studies indicate that dysregulation of the Akt/PKB family of
 serine/threonine kinases is a prominent feature of many human cancers.
 The Akt/PKB family is composed of three members termed Akt1/PKB α ,
 Akt2/PKB{szligbeta}, and Akt3/PKB γ . It is currently not known to
 what extent there is functional overlap between these family members. We
 have recently identified small mol. inhibitors of Akt. These compds. have
 pleckstrin homol. domain-dependent, isoenzyme-specific activity. In this
 report, we present data showing the relative contribution that inhibition

of the different isoenzymes has on the apoptotic response of tumor cells to a variety of chemotherapies. In multiple cell backgrounds, maximal induction of caspase-3 activity is achieved when both Akt1 and Akt2 are inhibited. This induction is not reversed by overexpression of functionally active Akt3. The level of caspase-3 activation achieved under these conditions is equivalent to that observed with the phosphatidylinositol-3-kinase inhibitor LY294002. We also show that in different tumor cell backgrounds inhibition of mammalian target of rapamycin, a downstream substrate of Akt, is less effective in inducing caspase-3 activity than inhibition of Akt1 and Akt2. This shows that the survival phenotype conferred by Akt can be mediated by signaling pathways independent of mammalian target of rapamycin in some tumor cell backgrounds. Finally, we show that inhibition of both Akt1 and Akt2 selectively sensitizes tumor cells, but not normal cells, to apoptotic stimuli.

IT 612848-78-9 616873-28-0
 RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (tumor cell sensitization to apoptotic stimuli by selective inhibition of specific Akt/PKBs)
 RN 612848-78-9 CAPLUS
 CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(2-methylpropyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidiny]-1,3-dihydro- (9CI) (CA INDEX NAME)



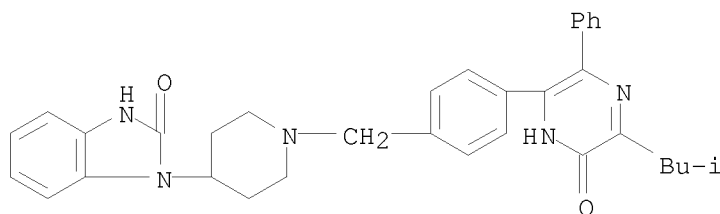
RN 616873-28-0 CAPLUS
 CN 2H-Benzimidazol-2-one, 1-[1-[[4-(4,5-dihydro-6-methyl-5-oxo-3-phenylpyrazinyl)phenyl]methyl]-4-piperidiny]-1,3-dihydro- (9CI) (CA INDEX NAME)



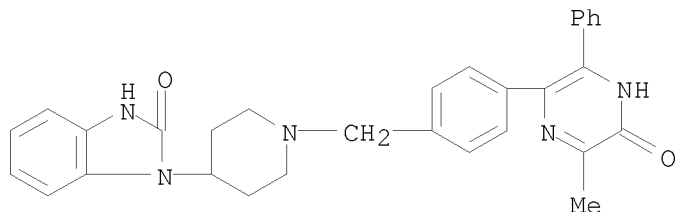
REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 28 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2005:86368 CAPLUS
 DOCUMENT NUMBER: 142:211437
 TITLE: Discovery of 2,3,5-trisubstituted pyridine derivatives as potent Akt1 and Akt2 dual inhibitors
 AUTHOR(S): Zhao, Zhijian; Leister, William H.; Robinson, Ronald G.; Barnett, Stanley F.; Defeo-Jones, Deborah; Jones,

Raymond E.; Hartman, George D.; Huff, Joel R.; Huber, Hans E.; Duggan, Mark E.; Lindsley, Craig W.
 CORPORATE SOURCE: Department of Medicinal Chemistry, Technology Enabled Synthesis Group, Merck Research Laboratories, Merck & Co., West Point, PA, 19486, USA
 SOURCE: Bioorganic & Medicinal Chemistry Letters (2005), 15(4), 905-909
 CODEN: BMCLE8; ISSN: 0960-894X
 PUBLISHER: Elsevier B.V.
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 142:211437
 AB This letter describes the discovery of a novel series of dual Akt1/Akt2 kinase inhibitors, based on a 2,3,5-trisubstituted pyridine scaffold. Compds. from this series, which contain a 5-tetrazolyl moiety, exhibit more potent inhibition of Akt2 than Akt1.
 IT 612848-78-9 616873-28-0
 RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (preparation of 2,3,5-trisubstituted pyridine derivs. as potent Akt1/Akt2 dual inhibitors)
 RN 612848-78-9 CAPLUS
 CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(2-methylpropyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidiny]-1,3-dihydro- (9CI) (CA INDEX NAME)



RN 616873-28-0 CAPLUS
 CN 2H-Benzimidazol-2-one, 1-[1-[[4-(4,5-dihydro-6-methyl-5-oxo-3-phenylpyrazinyl)phenyl]methyl]-4-piperidiny]-1,3-dihydro- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 29 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2005:74699 CAPLUS
 DOCUMENT NUMBER: 142:211435
 TITLE: Allosteric Akt (PKB) inhibitors: discovery and SAR of isozyme selective inhibitors
 AUTHOR(S): Lindsley, Craig W.; Zhao, Zhijian; Leister, William

H.; Robinson, Ronald G.; Barnett, Stanley F.; Defeo-Jones, Deborah; Jones, Raymond E.; Hartman, George D.; Huff, Joel R.; Huber, Hans E.; Duggan, Mark E.

CORPORATE SOURCE: Department of Medicinal Chemistry, Technology Enabled Synthesis Group, Merck Research Laboratories, Merck & Co., West Point, PA, 19486, USA

SOURCE: Bioorganic & Medicinal Chemistry Letters (2005), 15(3), 761-764

CODEN: BMCLE8; ISSN: 0960-894X

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 142:211435

AB This letter describes the development of two series of potent and selective allosteric Akt kinase inhibitors that display an unprecedented level of selectivity for either Akt1, Akt2 or both Akt1/Akt2. An iterative analog library synthesis approach quickly provided a highly selective Akt1/Akt2 inhibitor that induces apoptosis in tumor cells and inhibits Akt phosphorylation in vivo.

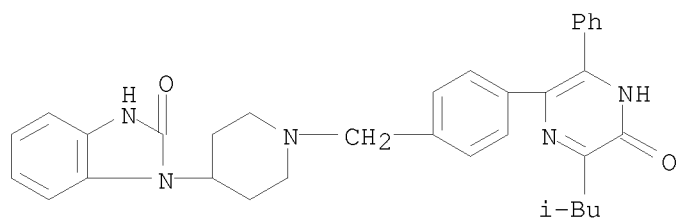
IT 612847-15-1P 612847-21-9P 612847-23-1P
612848-78-9P 616873-18-8P 616873-20-2P
616873-28-0P 616873-30-4P 841288-47-9P
841288-48-0P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(pyrazinone derivs. preparation and SAR of Akt isoenzyme selective inhibition)

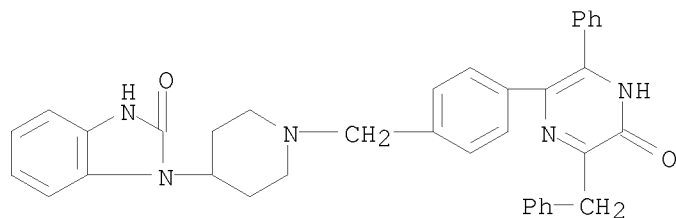
RN 612847-15-1 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(2-methylpropyl)-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyll]-1,3-dihydro- (9CI) (CA INDEX NAME)



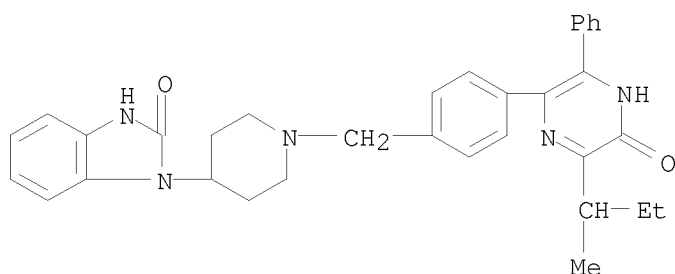
RN 612847-21-9 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-5-oxo-3-phenyl-6-(phenylmethyl)pyrazinyl]phenyl]methyl]-4-piperidinyll]-1,3-dihydro- (9CI) (CA INDEX NAME)



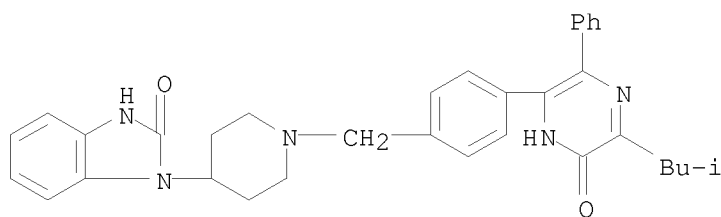
RN 612847-23-1 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(1-methylpropyl)-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidiny]-1,3-dihydro- (9CI) (CA INDEX NAME)



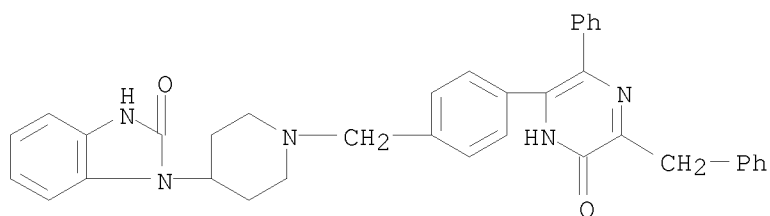
RN 612848-78-9 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(2-methylpropyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidiny]-1,3-dihydro- (9CI) (CA INDEX NAME)



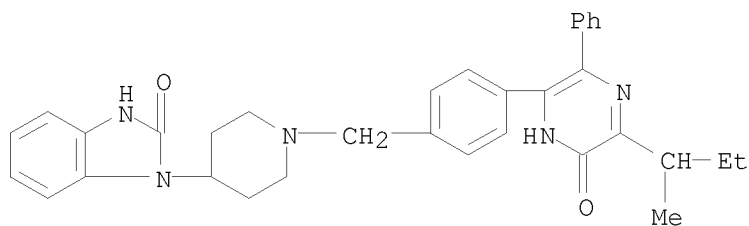
RN 616873-18-8 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-6-oxo-3-phenyl-5-(phenylmethyl)pyrazinyl]phenyl]methyl]-4-piperidiny]-1,3-dihydro- (9CI) (CA INDEX NAME)



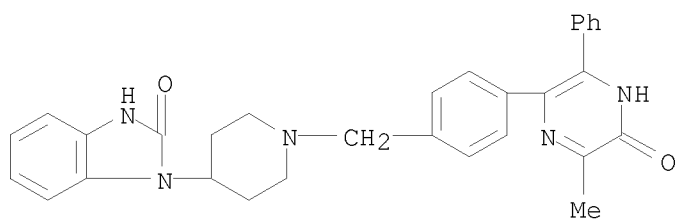
RN 616873-20-2 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(1-methylpropyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidiny]-1,3-dihydro- (9CI) (CA INDEX NAME)



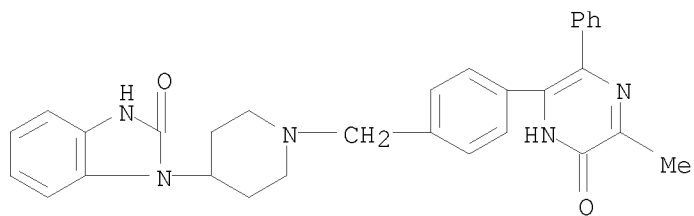
RN 616873-28-0 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-(4,5-dihydro-6-methyl-5-oxo-3-phenylpyrazinyl)phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



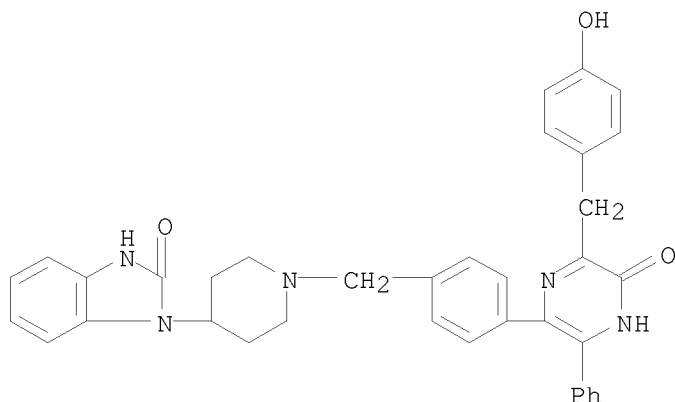
RN 616873-30-4 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-(1,6-dihydro-5-methyl-6-oxo-3-phenylpyrazinyl)phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)

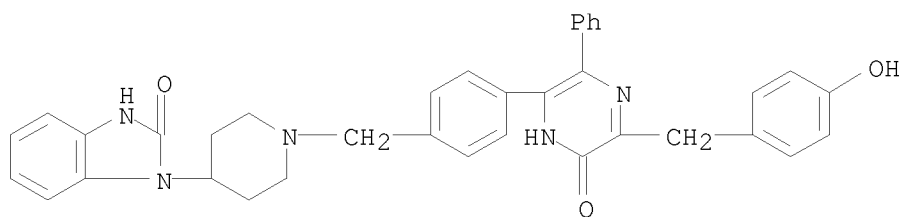


RN 841288-47-9 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-[(4-hydroxyphenyl)methyl]-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



RN 841288-48-0 CAPLUS
 CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-[(4-hydroxyphenyl)methyl]-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI)
 (CA INDEX NAME)



REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

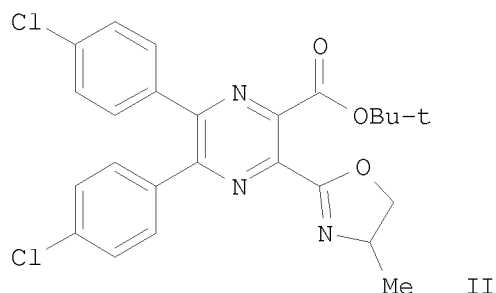
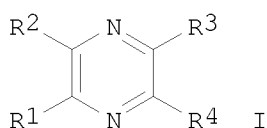
L4 ANSWER 30 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2004:1127371 CAPLUS
 DOCUMENT NUMBER: 142:56364
 TITLE: Preparation of 2,3-substituted 5,6-diaryl-pyrazine derivatives as CB1 modulators
 INVENTOR(S): Cheng, Leifeng; Wilstermann, Michael
 PATENT ASSIGNEE(S): Astrazeneca Ab, Swed.
 SOURCE: PCT Int. Appl., 54 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004111039	A1	20041223	WO 2004-SE968	20040616
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE,				

SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,
 SN, TD, TG

AU 2004247614	A1	20041223	AU 2004-247614	20040616
CA 2527037	A1	20041223	CA 2004-2527037	20040616
EP 1638956	A1	20060329	EP 2004-749010	20040616
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				
JP 2006527769	T	20061207	JP 2006-517042	20040616
US 2007093505	A1	20070426	US 2005-561033	20051216
PRIORITY APPLN. INFO.:			GB 2003-14261	A 20030619
			WO 2004-SE968	W 20040616

OTHER SOURCE(S): MARPAT 142:56364
 GI



- AB Title compds. I [wherein R1, R2 = independently (un)substituted Ph, thienyl, pyridinyl; R3, R4 = (CH2)nCO2R7, CH2OCH2R8, (CH2)qR9 with proviso, (un)substituted alkyl, etc.; R7 = (un)substituted cycloalkyl/cyclo/alkyl, (CH2)aphenyl, (un)saturated heterocyclyl; a = 0-4; R8 = (un)substituted alkyl, Ph, (un)saturated aromatic heterocyclyl; n = 0-4; q = 0-4; R9 = (un)substituted cycloalkyl, ph, aromatic heterocyclyl, saturated or partially unsatd. 5-12-membered heterocyclyl; and pharmaceutically acceptable salts thereof] were prepared as cannabinoid 1 (CB1) receptor modulators. Thus, reacting (DL)-alaninol with 5,6-Bis(4-chlorophenyl)-3-(tert-butoxycarbonyl)pyrazine-2-carboxylic acid (preparation given), followed by cyclization gave pyrazine II. I are active at the CB1 receptor (IC50 < 1 μM), most preferred compds. have IC50 < 200 nM. For instance, II exhibited an IC50 (hCB1) = 1.8 nM. Thus, I and their pharmaceutical compns. are useful for the treatment of obesity, psychiatric and neurol. disorders (no data).
- IT 811436-84-7P, 2,3-Bis(4-chlorophenyl)-5,6-bis[(piperidin-1-yl)carbonyl]pyrazine 811436-85-8P, Di(tert-butyl) 5,6-bis(4-chlorophenyl)pyrazine-2,3-dicarboxylate 811436-99-4P, tert-Butyl 5,6-bis(4-chlorophenyl)-3-[(2H-tetrazol-2-yl)methyl]pyrazine-2-

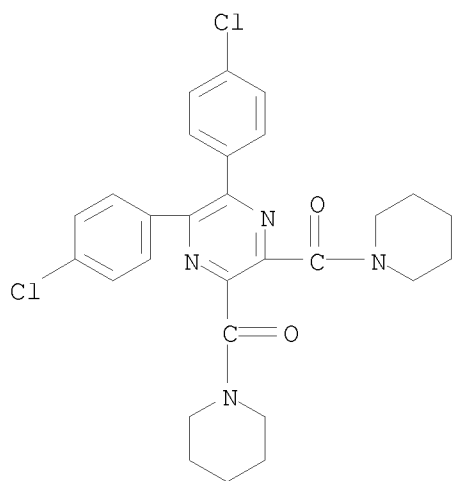
carboxylate

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(drug candidate; preparation of 2,3-substituted 5,6-diaryl-pyrazines as CB1 modulators)

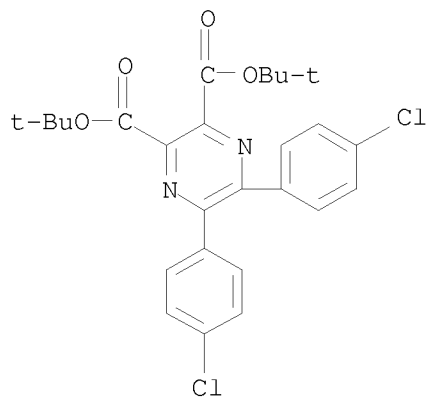
RN 811436-84-7 CAPLUS

CN Piperidine, 1,1'-[[5,6-bis(4-chlorophenyl)-2,3-pyrazinediyl]dicarbonyl]bis- (9CI) (CA INDEX NAME)



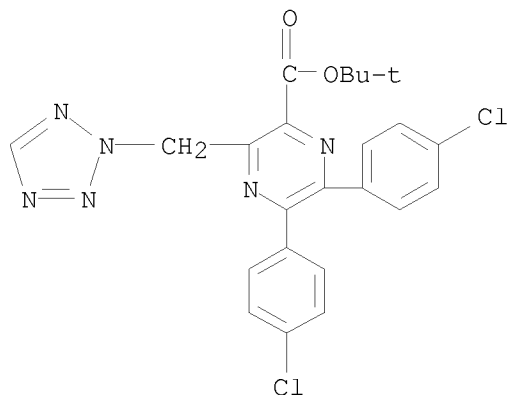
RN 811436-85-8 CAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

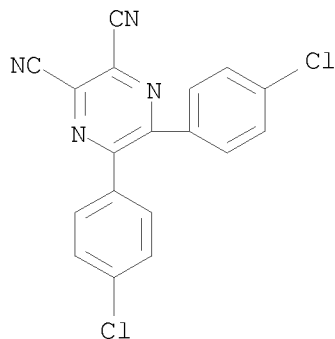


RN 811436-99-4 CAPLUS

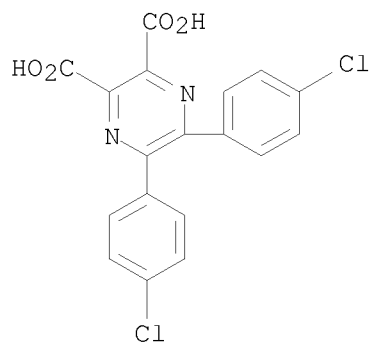
CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(2H-tetrazol-2-ylmethyl)-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



IT 810685-47-3P, 5,6-Bis(4-chlorophenyl)pyrazine-2,3-dicarbonitrile
 810685-49-5P, 5,6-Bis(4-chlorophenyl)pyrazine-2,3-dicarboxylic
 acid 811436-87-0P, 5,6-Bis(4-chlorophenyl)-3-[N-(2-hydroxy-1,1-
 dimethylethyl)carbamoyl]pyrazine-2-carboxylic acid tert-butyl ester
 811436-88-1P, 5,6-Bis(4-chlorophenyl)-3-(tert-
 butoxycarbonyl)pyrazine-2-carboxylic acid 811436-90-5P,
 5,6-Bis(4-chlorophenyl)-3-[N-[1-(hydroxymethyl)cyclopentyl]carbamoyl]pyraz-
 ine-2-carboxylic acid tert-butyl ester 811436-92-7P,
 5,6-Bis(4-chlorophenyl)-3-[N-(2-hydroxy-1-methylethyl)carbamoyl]pyrazine-2-
 carboxylic acid tert-butyl ester 811436-95-0P,
 5,6-Bis(4-chlorophenyl)-3-[N-(2-hydroxy-1-phenylethyl)carbamoyl]pyrazine-2-
 carboxylic acid tert-butyl ester 811436-98-3P,
 5,6-Bis(4-chlorophenyl)-3-[N-(2-hydroxy-2-phenylethyl)carbamoyl]pyrazine-2-
 carboxylic acid tert-butyl ester 811437-00-0P, Ethyl
 5,6-bis(4-chlorophenyl)-3-[(2H-tetrazol-2-yl)methyl]pyrazine-2-carboxylate
 811437-01-1P, Ethyl 5,6-bis(4-chlorophenyl)-3-[(1H-tetrazol-1-
 yl)methyl]pyrazine-2-carboxylate 811437-03-3P,
 5,6-Bis(4-chlorophenyl)-3-[(2H-tetrazol-2-yl)methyl]pyrazine-2-carboxylic
 acid
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (intermediate; preparation of 2,3-substituted 5,6-diaryl-pyrazines as CB1
 modulators)
 RN 810685-47-3 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-chlorophenyl)- (CA INDEX NAME)

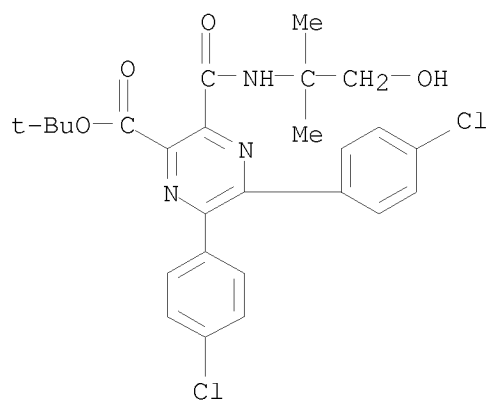


RN 810685-49-5 CAPLUS
 CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)- (CA INDEX NAME)



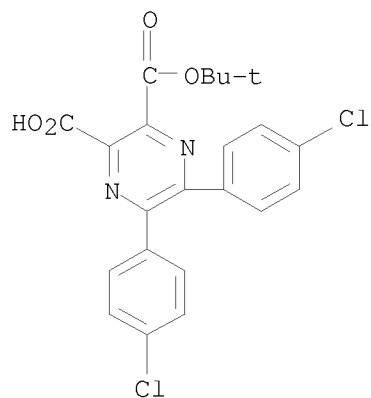
RN 811436-87-0 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[2-hydroxy-1,1-dimethylethyl]amino]carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



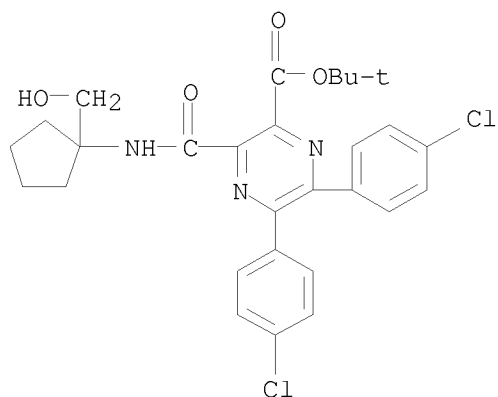
RN 811436-88-1 CAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)-, mono(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

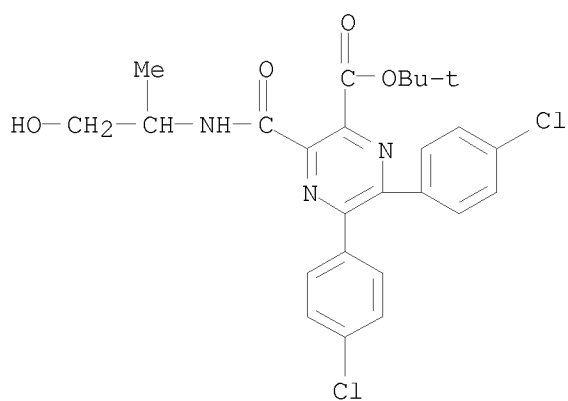


RN 811436-90-5 CAPLUS

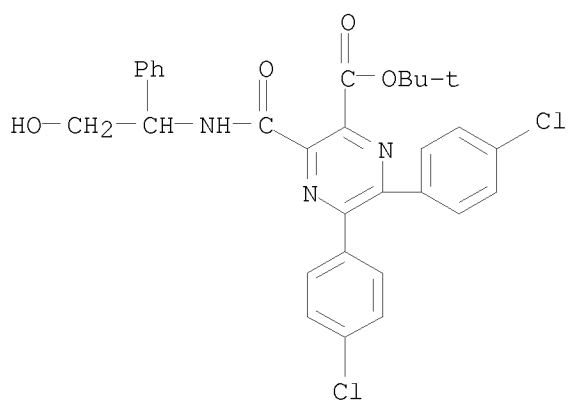
CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[[1-(hydroxymethyl)cyclopentyl]amino]carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



RN 811436-92-7 CAPLUS
 CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[2-hydroxy-1-methylethyl]amino]carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

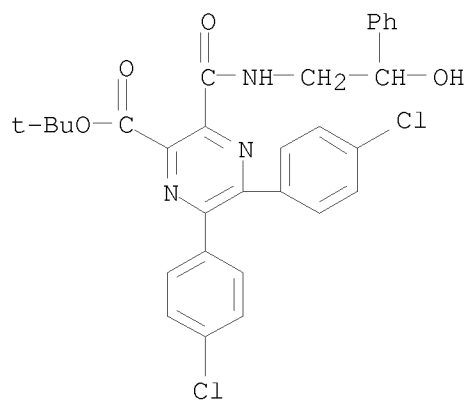


RN 811436-95-0 CAPLUS
 CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[2-hydroxy-1-phenylethyl]amino]carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



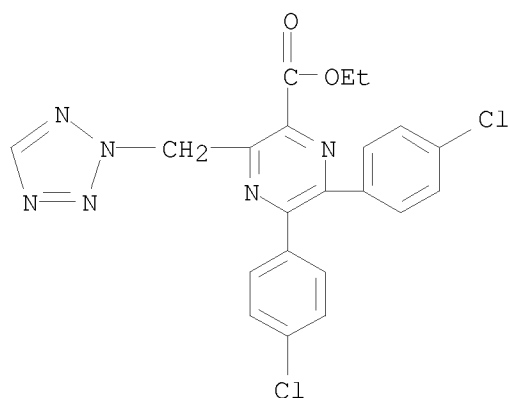
RN 811436-98-3 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[(2-hydroxy-2-phenylethyl)amino]carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



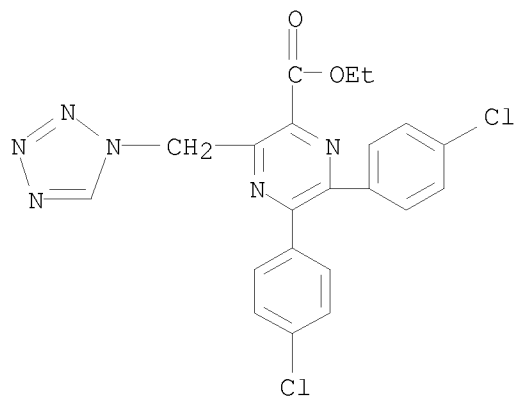
RN 811437-00-0 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(2H-tetrazol-2-ylmethyl)-, ethyl ester (9CI) (CA INDEX NAME)

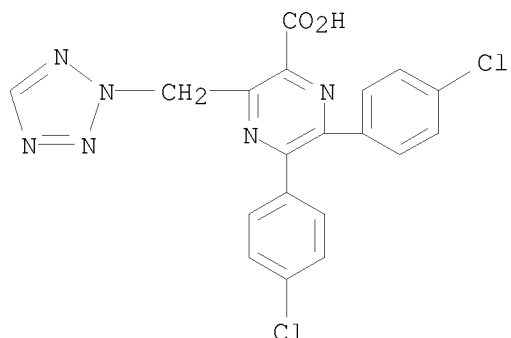


RN 811437-01-1 CAPLUS

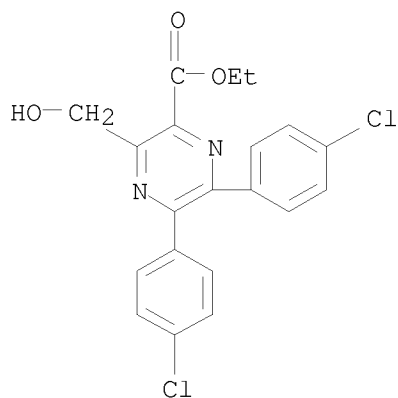
CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(1H-tetrazol-1-ylmethyl)-, ethyl ester (9CI) (CA INDEX NAME)



RN 811437-03-3 CAPLUS
CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(2H-tetrazol-2-ylmethyl)- (9CI) (CA INDEX NAME)



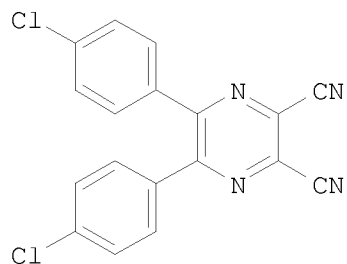
IT 811437-02-2, Ethyl 5,6-bis(4-chlorophenyl)-3-(hydroxymethyl)pyrazine-2-carboxylate
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of 2,3-substituted 5,6-diaryl-pyrazines as CB1 modulators)
RN 811437-02-2 CAPLUS
CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(hydroxymethyl)-, ethyl ester (9CI) (CA INDEX NAME)



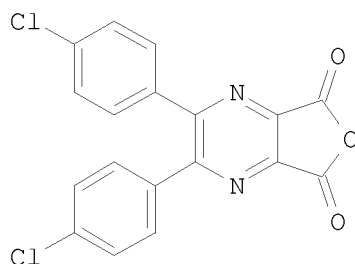
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 31 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:1127370 CAPLUS
DOCUMENT NUMBER: 142:56363
TITLE: Preparation of 5,6-bis(4-chlorophenyl)-N-piperidin-1-yl-3-(piperidin-1-ylcarbonyl)pyrazine-2-carboxamide for treatment of obesity
INVENTOR(S): Cheng, Leifeng
PATENT ASSIGNEE(S): Astrazeneca Ab, Swed.
SOURCE: PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2004111038	A1	20041223	WO 2004-SE967	20040616
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW,			
RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
PRIORITY APPLN. INFO.:			GB 2003-14049	A 20030618
GI				



III

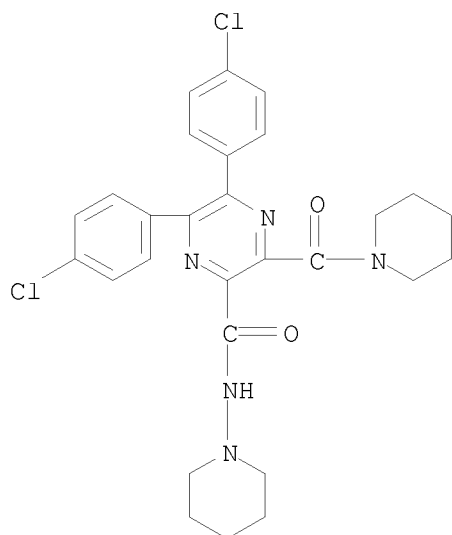


IV

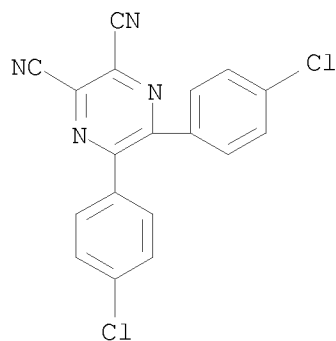
AB 5,6-Bis(4-chlorophenyl)-N-piperidin-1-yl-3-(piperidin-1-yl-carbonyl)pyrazine-2-carboxamide (I) was prepared by reacting 4-ClC₆H₄CHO with NaCN/EtOH which gave 1,2-bis(4-chlorophenyl)-2-hydroxyethanone (II). II was oxidized to the ethane-1,2-dione which was condensed with diaminomaleonitrile to give pyrazine III. III was converted to the corresponding 2,3-dicarboxylic acid which was treated with AcCl to give furo[3,4-b]pyrazine-5,7-dione IV. IV was then subsequently reacted with piperidine/MeCN and oxalyl chloride/1-piperidinamine/CH₂Cl₂ to give the title compound that is intended to be used to treat obesity, psychiatric and neurol. disorders.

IT 810685-52-0P
 RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
 (preparation of bis(chlorophenyl)piperidinyldipyrzinecarboxamide derivative for treating obesity, psychiatric disorders, and neurol. disorders)

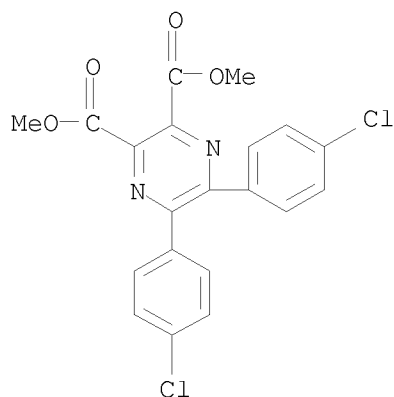
RN 810685-52-0 CAPLUS
 CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-1-piperidinyl-3-(1-piperidinylcarbonyl)- (9CI) (CA INDEX NAME)



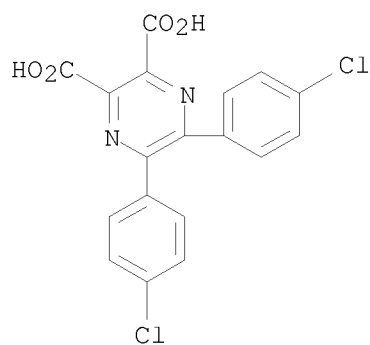
IT 810685-47-3P, 5,6-Bis(4-chlorophenyl)pyrazine-2,3-dicarbonitrile
 810685-48-4P 810685-49-5P, 5,6-Bis(4-chlorophenyl)pyrazine-2,3-dicarboxylic acid 810685-51-9P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation of bis(chlorophenyl)piperidinylpyrazinecarboxamide derivative for treating obesity, psychiatric disorders, and neurol. disorders)
 RN 810685-47-3 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-chlorophenyl)- (CA INDEX NAME)



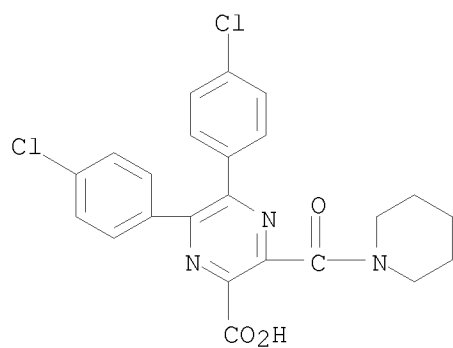
RN 810685-48-4 CAPLUS
 CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)-, dimethyl ester (9CI) (CA INDEX NAME)



RN 810685-49-5 CAPLUS
 CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)- (CA INDEX NAME)



RN 810685-51-9 CAPLUS
 CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(1-piperidinylcarbonyl)-
 (9CI) (CA INDEX NAME)

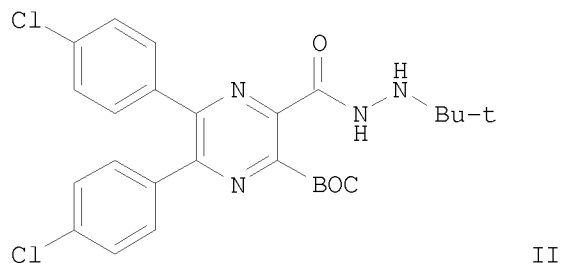
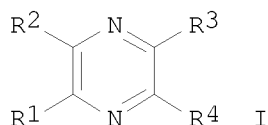


REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 32 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2004:1127366 CAPLUS
 DOCUMENT NUMBER: 142:56362
 TITLE: Preparation of 3-substituted 5,6-diaryl-pyrazine-2-carboxamide and 2-sulfonamide derivatives as

INVENTOR(S): cannabinoid receptor 1 (CB1) modulators
 Cheng, Leifeng
 PATENT ASSIGNEE(S): Astrazeneca AB, Swed.
 SOURCE: PCT Int. Appl., 120 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004111034	A1	20041223	WO 2004-SE970	20040616
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2004247616	A1	20041223	AU 2004-247616	20040616
CA 2527035	A1	20041223	CA 2004-2527035	20040616
EP 1638953	A1	20060329	EP 2004-749012	20040616
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
BR 2004011508	A	20060725	BR 2004-11508	20040616
CN 1809554	A	20060726	CN 2004-80017200	20040616
JP 2006527771	T	20061207	JP 2006-517044	20040616
NO 2005005919	A	20060216	NO 2005-5919	20051213
MX 2005PA13711	A	20060308	MX 2005-PA13711	20051215
US 2007093484	A1	20070426	US 2005-560862	20051215
PRIORITY APPLN. INFO.:			GB 2003-14057	A 20030618
			WO 2004-SE970	W 20040616
OTHER SOURCE(S):		MARPAT 142:56362		
GI				

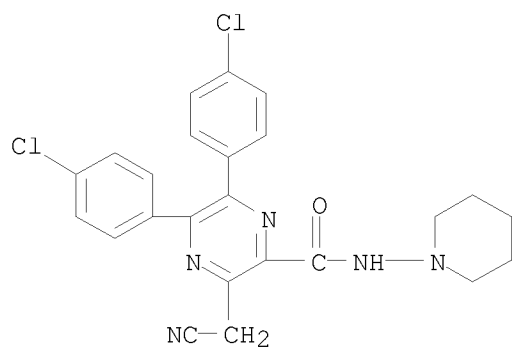


AB Title compds. I [wherein R1, R2 = independently (un)substituted Ph, thienyl, pyridinyl; R3 = X-Y-NR5R6; X = absent, CO, or SO2; Y = absent, NH optionally substituted by an alkyl group; R5, R6 = independently (un)substituted amino/alkyl, (CH2)r(phenyl)s, (un)saturated 5-8-membered heterocyclyl; R5 = H and R6 = defined above; or R5NR6 = (un)substituted (un)saturated 5-8-membered heterocyclyl; r = 0-4; s = 1 when r = 0, otherwise s = 1 or 2; R5NR6 = (un)substituted (un)saturated 5-8-membered heterocyclyl; R4 = (CH2)nCO2R7; n = 0-4; R7 = (un)substituted cycloalkyl/cyclo/alkyl, (CH2)nphenyl, saturated or partially unsatd. 5-8-membered heterocyclyl, CONH2 and derivs.; n = defined as above; and pharmaceutically acceptable salts thereof] were prepared as cannabinoid 1 (CB1) receptor modulators. For example, reacting 3-(tert-butoxycarbonyl)-5,6-bis(4-chlorophenyl)pyrazine-2-carboxylic acid (preparation given) with tert-butylhydrazine hydrochloride gave pyrazine II. I are active at the CB1 receptor (IC50 < 1 μ M), most preferred compds. have IC50 < 200 nM. For instance, II exhibited an IC50 (hCB1) = 1.8 nM. Thus, I and their pharmaceutical compns. are useful for the treatment of obesity, psychiatric and neurol. disorders (no data).

IT 811441-12-0P, 5,6-Bis(4-chlorophenyl)-3-(cyanomethyl)-N-(piperidin-1-yl)pyrazine-2-carboxamide 811441-34-6P, tert-Butyl [[1-[[5,6-bis(4-chlorophenyl)-3-[[piperidin-1-yl]amino]carbonyl]pyrazin-2-yl]methyl]-1H-1,2,3-triazol-4-yl]methyl]carbamate 811441-35-7P
 RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
 (drug candidate; preparation of 3-substituted 5,6-diarylpyrazine-2-carboxamide and 2-sulfonamide derivs. as CB1 modulators)

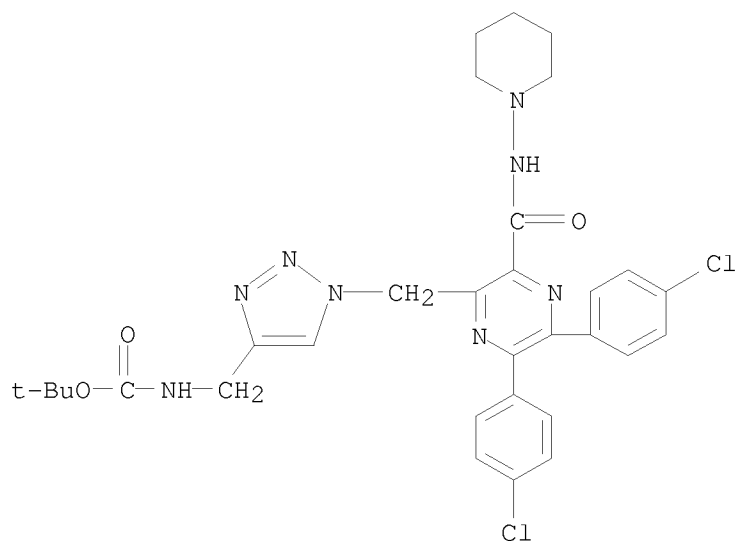
RN 811441-12-0 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-(cyanomethyl)-N-1-piperidinyl- (9CI) (CA INDEX NAME)



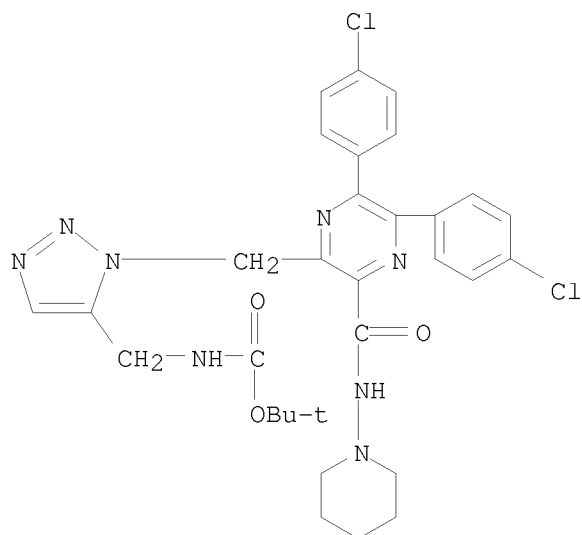
RN 811441-34-6 CAPLUS

CN Carbamic acid, [[1-[[5,6-bis(4-chlorophenyl)-3-[(1-piperidinylamino)carbonyl]pyrazinyl]methyl]-1H-1,2,3-triazol-4-yl]methyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



RN 811441-35-7 CAPLUS

CN Carbamic acid, [[1-[[5,6-bis(4-chlorophenyl)-3-[(1-piperidinylamino)carbonyl]pyrazinyl]methyl]-1H-1,2,3-triazol-5-yl]methyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



IT 811436-92-7P, tert-Butyl 5,6-bis(4-chlorophenyl)-3-[[2-hydroxy-1-methylethyl)amino]carbonyl]pyrazine-2-carboxylate 811440-95-6P, tert-Butyl 5,6-bis(4-chlorophenyl)-3-[[piperidin-1-yl)amino]carbonyl]pyrazine-2-carboxylate 811440-96-7P, Butyl 5,6-bis(4-chlorophenyl)-3-[[piperidin-1-yl)amino]carbonyl]pyrazine-2-carboxylate 811440-97-8P, Cyclohexyl 5,6-bis(4-chlorophenyl)-3-[[piperidin-1-yl)amino]carbonyl]pyrazine-2-carboxylate 811440-98-9P, Benzyl 5,6-bis(4-chlorophenyl)-3-[[piperidin-1-yl)amino]carbonyl]pyrazine-2-carboxylate 811440-99-0P, tert-Butyl 5,6-bis(4-chlorophenyl)-3-[[cis-2-hydroxycyclohexyl)amino]carbonyl]pyrazine-2-carboxylate 811441-00-6P, tert-Butyl 5,6-bis(4-chlorophenyl)-3-[[trans-2-hydroxycyclohexyl)amino]carbonyl]pyrazine-2-carboxylate 811441-01-7P, tert-Butyl 5,6-bis(4-chlorophenyl)-3-[[2-[4-(trifluoromethyl)phenyl]hydrazino]carbonyl]pyrazine-2-carboxylate 811441-02-8P, tert-Butyl 5,6-bis(4-chlorophenyl)-3-[[morpholin-4-yl)amino]carbonyl]pyrazine-2-carboxylate 811441-03-9P, tert-Butyl 5,6-bis(4-chlorophenyl)-3-[[2-(tert-butyl)hydrazino]carbonyl]pyrazine-2-carboxylate 811441-04-0P, 3-(tert-Butoxymethyl)-5,6-bis(4-chlorophenyl)-N-(piperidin-1-yl)pyrazine-2-carboxamide 811441-08-4P, 5,6-Bis(4-chlorophenyl)-3-[[cyclohexylidene)methyl]-N-(piperidin-1-yl)pyrazine-2-carboxamide 811441-17-5P, 5,6-Bis(4-chlorophenyl)-3-(1-methoxyethyl)-N-(piperidin-1-yl)pyrazine-2-carboxamide 811441-22-2P, tert-Butyl 5,6-bis(4-chlorophenyl)-3-[[4,4-difluorocyclohexyl)amino]carbonyl]pyrazine-2-carboxylate 811441-23-3P, tert-Butyl 5,6-bis(4-chlorophenyl)-3-[[pentylamino]carbonyl]pyrazine-2-carboxylate 811441-24-4P, tert-Butyl 5,6-bis(4-chlorophenyl)-3-[[1-ethylpropyl)amino]carbonyl]pyrazine-2-carboxylate 811441-25-5P, tert-Butyl 5,6-bis(4-chlorophenyl)-3-[[4,4-difluoropiperidin-1-yl)amino]carbonyl]pyrazine-2-carboxylate 811441-27-7P, 5,6-Bis(4-chlorophenyl)-N-(piperidin-1-yl)-3-[[4-propyl-1H-1,2,3-triazol-1-yl)methyl]pyrazine-2-carboxamide 811441-32-4P, 5,6-Bis(4-chlorophenyl)-3-[[5-(1-hydroxyethyl)-1H-1,2,3-triazol-1-yl)methyl]-N-(piperidin-1-yl)pyrazine-2-carboxamide 811441-36-8P, 3-[[4-(Aminomethyl)-1H-1,2,3-triazol-1-yl)methyl]-5,6-bis(4-chlorophenyl)-N-(piperidin-1-yl)pyrazine-2-carboxamide hydrochloride 811441-37-9P, 3-[[5-(Aminomethyl)-1H-1,2,3-triazol-1-yl)methyl]-5,6-bis(4-chlorophenyl)-N-(piperidin-1-yl)pyrazine-2-carboxamide hydrochloride 811441-38-0P, 5,6-Bis(4-chlorophenyl)-3-(phenoxyethyl)-N-(piperidin-1-yl)pyrazine-2-carboxamide

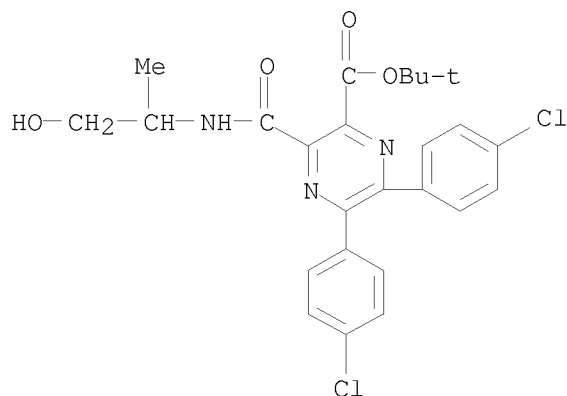
811441-40-4P, 5,6-Bis(4-chlorophenyl)-3-[(morpholin-4-yl)methyl]-N-(piperidin-1-yl)pyrazine-2-carboxamide 811441-42-6P, 5,6-Bis(4-chlorophenyl)-3-[(piperidin-1-yl)methyl]-N-(piperidin-1-yl)pyrazine-2-carboxamide 811441-44-8P, 5,6-Bis(4-chlorophenyl)-3-[[cyclohex-2-en-1-yl]oxy]methyl]-N-(piperidin-1-yl)pyrazine-2-carboxamide 811441-47-1P, 5,6-Bis(4-chlorophenyl)-3-[(cyclohexyloxy)methyl]-N-(piperidin-1-yl)pyrazine-2-carboxamide 811441-50-6P, 5,6-Bis(4-chlorophenyl)-N-(2-hydroxyethyl)-N'-(piperidin-1-yl)pyrazine-2,3-dicarboxamide 811441-52-8P, 5,6-Bis(4-chlorophenyl)-N-(3-hydroxybutyl)-N'-(piperidin-1-yl)pyrazine-2,3-dicarboxamide 811441-53-9P, 5,6-Bis(4-chlorophenyl)-N-(3-hydroxypropyl)-N'-(piperidin-1-yl)pyrazine-2,3-dicarboxamide 811441-54-0P, tert-Butyl 5,6-bis(4-methylphenyl)-3-[[piperidin-1-yl]amino]carbonylpyrazine-2-carboxylate 811441-58-4P, 5,6-Bis(4-methylphenyl)-N-(piperidin-1-yl)-3-[(1H-tetrazol-1-yl)methyl]pyrazine-2-carboxamide 811441-62-0P, 5,6-Bis(4-methylphenyl)-N-(piperidin-1-yl)-3-[(2H-tetrazol-2-yl)methyl]pyrazine-2-carboxamide 811441-64-2P, 5,6-Bis(4-chlorophenyl)-N-(piperidin-1-yl)-3-[(2H-tetrazol-2-yl)methyl]pyrazine-2-carboxamide 811441-65-3P, 5,6-Bis(4-chlorophenyl)-N-(piperidin-1-yl)-3-[(1H-tetrazol-1-yl)methyl]pyrazine-2-carboxamide 811441-66-4P, 5,6-Bis(4-chlorophenyl)-N-(4,4-difluorocyclohexyl)-3-[(2H-tetrazol-2-yl)methyl]pyrazine-2-carboxamide 811441-67-5P, 5,6-Bis(4-chlorophenyl)-N-(4,4-difluoropiperidin-1-yl)-3-[(2H-tetrazol-2-yl)methyl]pyrazine-2-carboxamide 811441-68-6P, 5,6-Bis(4-chlorophenyl)-3-[(2-methoxyethoxy)methyl]-N-(piperidin-1-yl)pyrazine-2-carboxamide 811441-71-1P, 5,6-Bis(4-chlorophenyl)-3-[(5-cyclopropyl-2H-tetrazol-2-yl)methyl]-N-(piperidin-1-yl)pyrazine-2-carboxamide 811441-74-4P, 5,6-Bis(4-chlorophenyl)-3-[(5-cyclopropyl-1H-tetrazol-1-yl)methyl]-N-(piperidin-1-yl)pyrazine-2-carboxamide 811441-75-5P, 5,6-Bis(4-chlorophenyl)-3-[(5-methyl-2H-tetrazol-2-yl)methyl]-N-(piperidin-1-yl)pyrazine-2-carboxamide 811441-78-8P, 5,6-Bis(4-chlorophenyl)-3-[(5-methyl-1H-tetrazol-1-yl)methyl]-N-(piperidin-1-yl)pyrazine-2-carboxamide 811441-79-9P, tert-Butyl 6-(4-chlorophenyl)-5-(4-methylphenyl)-3-[[piperidin-1-yl]amino]carbonylpyrazine-2-carboxylate 811441-86-8P, tert-Butyl 5-(4-chlorophenyl)-6-(4-methylphenyl)-3-[[piperidin-1-yl]amino]carbonylpyrazine-2-carboxylate 811441-87-9P, 6-(4-Chlorophenyl)-5-(4-methylphenyl)-N-(piperidin-1-yl)-3-[(2H-tetrazol-2-yl)methyl]pyrazine-2-carboxamide 811441-94-8P, 5-(4-Chlorophenyl)-6-(4-methylphenyl)-N-(piperidin-1-yl)-3-[(2H-tetrazol-2-yl)methyl]pyrazine-2-carboxamide 811441-97-1P, tert-Butyl 5,6-bis(4-chlorophenyl)-3-[[2-hydroxyethyl(methyl)amino]carbonyl]pyrazine-2-carboxylate 811441-98-2P, 5,6-Bis(4-chlorophenyl)-3-propoxypyrazine-2-carboxylic acid N-(piperidin-1-yl)amide 811442-03-2P, 5,6-Bis(4-chlorophenyl)-N-(piperidin-1-yl)-3-[(2H-tetrazol-5-yl)methyl]pyrazine-2-carboxamide 811442-07-6P, 5,6-Bis(4-chlorophenyl)-3-[[5-(morpholin-4-yl)-2H-tetrazol-2-yl]methyl]-N-(piperidin-1-yl)pyrazine-2-carboxamide 811442-08-7P, 5,6-Bis(4-chlorophenyl)-3-[[5-(morpholin-4-yl)-1H-tetrazol-1-yl]methyl]-N-(piperidin-1-yl)pyrazine-2-carboxamide 811442-10-1P, 5,6-Bis(4-chlorophenyl)-N-(piperidin-1-yl)-3-[[5-(pyrrolidin-1-yl)-2H-tetrazol-2-yl]methyl]pyrazine-2-carboxamide 811442-11-2P, 5,6-Bis(4-chlorophenyl)-N-(piperidin-1-yl)-3-[[5-(pyrrolidin-1-yl)-1H-tetrazol-1-yl]methyl]pyrazine-2-carboxamide 811442-12-3P, 5,6-Bis(4-chlorophenyl)-3-[[5-(methylthio)-2H-tetrazol-2-yl]methyl]-N-(piperidin-1-yl)pyrazine-2-carboxamide 811442-13-4P, 5,6-Bis(4-chlorophenyl)-3-[[5-(methylthio)-1H-tetrazol-1-yl]methyl]-N-(piperidin-1-yl)pyrazine-2-carboxamide 811442-14-5P, 5,6-Bis(4-chlorophenyl)-N-(4,4-difluorocyclohexyl)-3-(methoxymethyl)pyrazine-2-carboxamide 811442-16-7P,

5,6-Bis(4-chlorophenyl)-N-(4,4-difluorocyclohexyl)-3-[[4-fluorobenzyl)oxymethyl]pyrazine-2-carboxamide 811442-19-0P,
 5,6-Bis(4-chlorophenyl)-3-[(4,4-difluoropiperidin-1-yl)methyl]-N-(piperidin-1-yl)pyrazine-2-carboxamide 811442-21-4P,
 5,6-Bis(4-chlorophenyl)-N-(4,4-difluorocyclohexyl)-3-[(4,4-difluoropiperidin-1-yl)methyl]pyrazine-2-carboxamide 811442-22-5P,
 , 5,6-Bis(4-chlorophenyl)-N-(4,4-difluoropiperidin-1-yl)-3-(methoxymethyl)pyrazine-2-carboxamide 811442-24-7P,
 5,6-Bis(4-chlorophenyl)-3-[[4-(1-hydroxyethyl)-1H-1,2,3-triazol-1-yl]methyl]-N-(piperidin-1-yl)pyrazine-2-carboxamide 811442-25-8P,
 , 3-[[4-(Aminomethyl)-1H-1,2,3-triazol-1-yl]methyl]-5,6-bis(4-chlorophenyl)-N-(piperidin-1-yl)pyrazine-2-carboxamide 811442-26-9P,
 3-[[5-(Aminomethyl)-1H-1,2,3-triazol-1-yl]methyl]-5,6-bis(4-chlorophenyl)-N-(piperidin-1-yl)pyrazine-2-carboxamide
 RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(drug candidate; preparation of 3-substituted 5,6-diarylpyrazine-2-carboxamide and 2-sulfonamide derivs. as CB1 modulators)

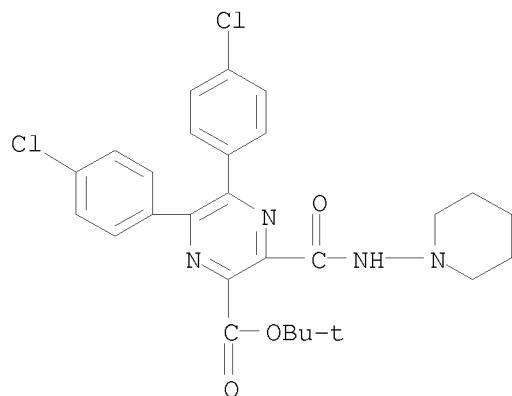
RN 811436-92-7 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[2-hydroxy-1-methylethyl)amino]carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

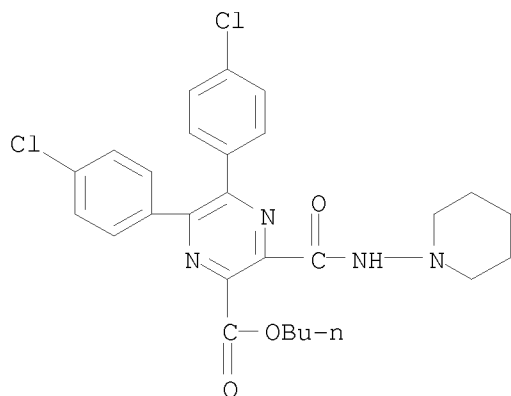


RN 811440-95-6 CAPLUS

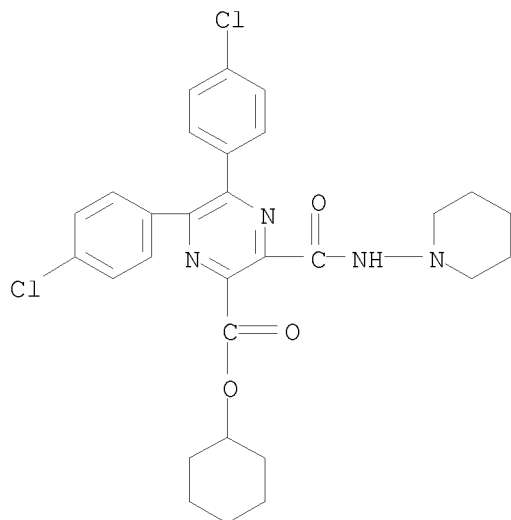
CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(1-piperidinylamino)carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



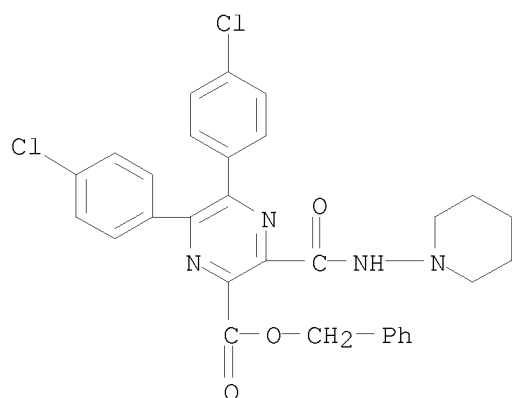
RN 811440-96-7 CAPLUS
CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(1-piperidinylamino)carbonyl]-, butyl ester (9CI) (CA INDEX NAME)



RN 811440-97-8 CAPLUS
CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(1-piperidinylamino)carbonyl]-, cyclohexyl ester (9CI) (CA INDEX NAME)



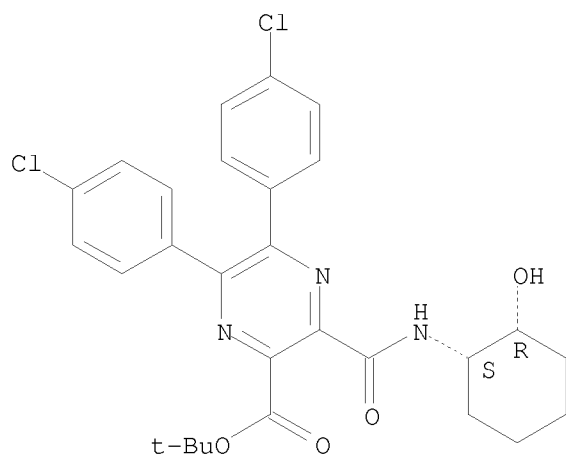
RN 811440-98-9 CAPLUS
CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(1-piperidinylamino)carbonyl]-, phenylmethyl ester (9CI) (CA INDEX NAME)



RN 811440-99-0 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[[(1R,2S)-2-hydroxycyclohexyl]amino]carbonyl]-, 1,1-dimethylethyl ester, rel- (9CI)
(CA INDEX NAME)

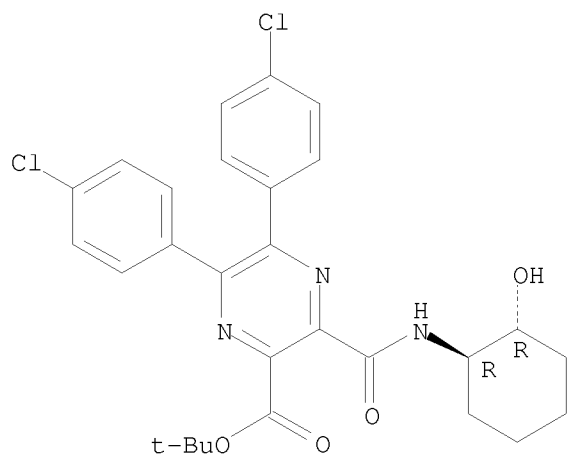
Relative stereochemistry.



RN 811441-00-6 CAPLUS

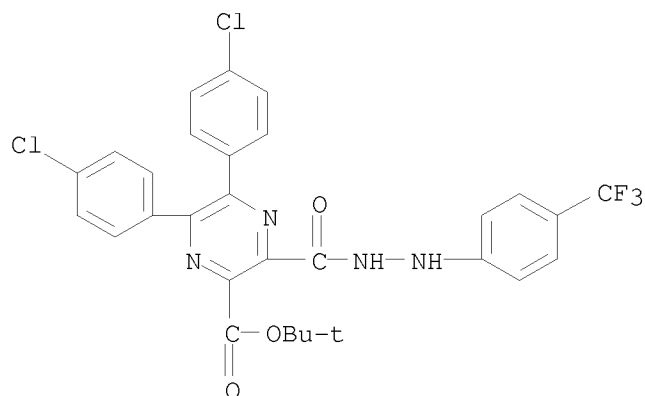
CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[[(1R,2R)-2-hydroxycyclohexyl]amino]carbonyl]-, 1,1-dimethylethyl ester, rel- (9CI)
(CA INDEX NAME)

Relative stereochemistry.



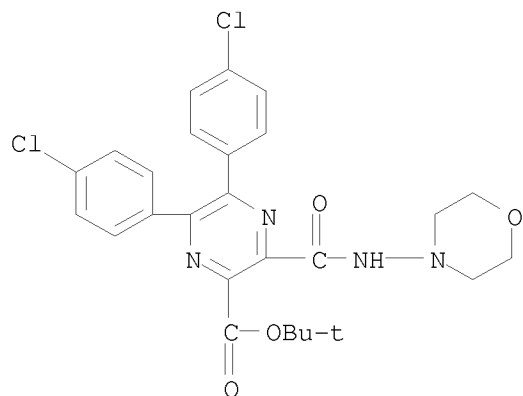
RN 811441-01-7 CAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)-, mono(1,1-dimethylethyl) ester, 2-[4-(trifluoromethyl)phenyl]hydrazide (9CI) (CA INDEX NAME)

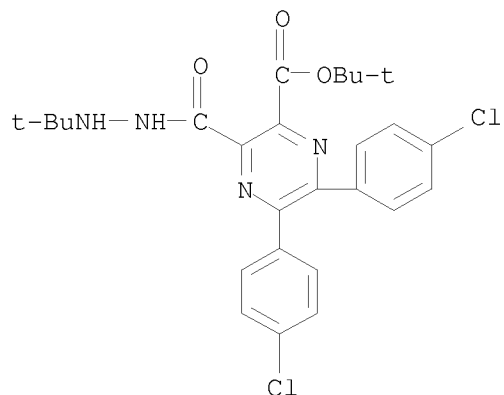


RN 811441-02-8 CAPLUS

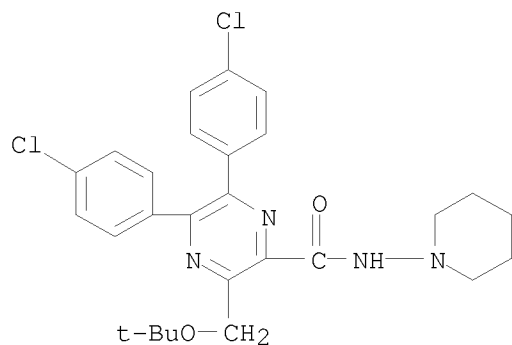
CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(4-morpholinylamino)carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



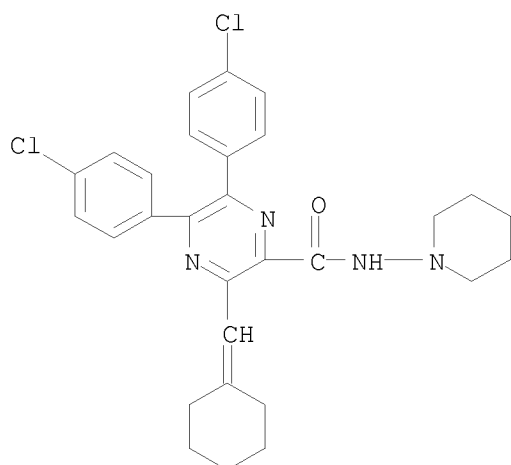
RN 811441-03-9 CAPLUS
 CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)-,
 mono(1,1-dimethylethyl) ester, 2-(1,1-dimethylethyl)hydrazide (9CI) (CA
 INDEX NAME)



RN 811441-04-0 CAPLUS
 CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-[(1,1-
 dimethylethoxy)methyl]-N-1-piperidinyl- (9CI) (CA INDEX NAME)

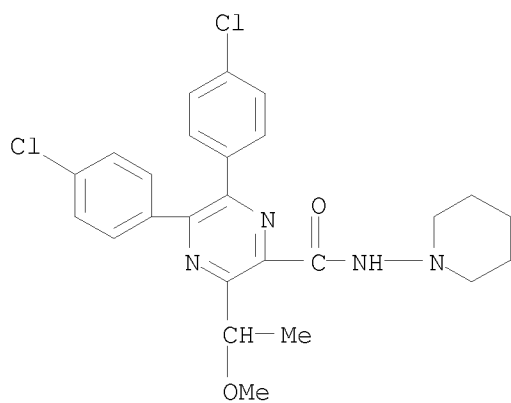


RN 811441-08-4 CAPLUS
 CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-(cyclohexylidenemethyl)-N-1-
 piperidinyl- (9CI) (CA INDEX NAME)



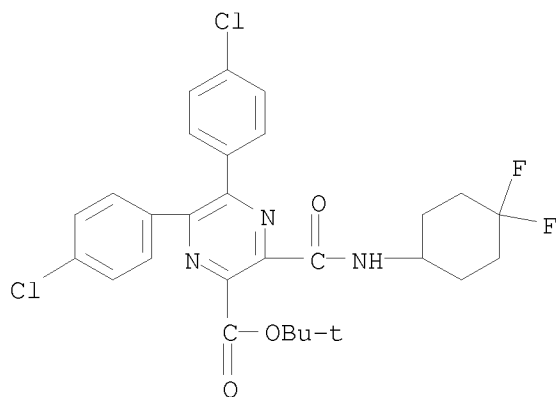
RN 811441-17-5 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-(1-methoxyethyl)-N-1-piperidinyl- (9CI) (CA INDEX NAME)



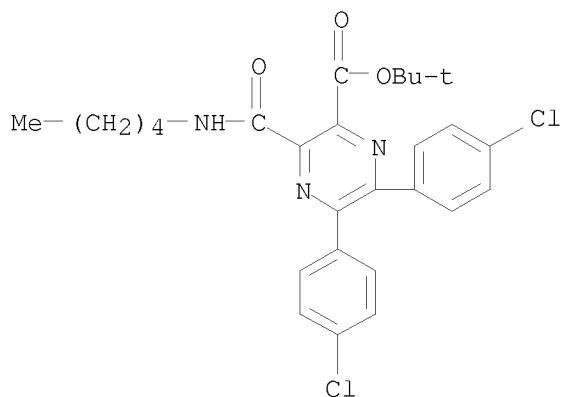
RN 811441-22-2 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[(4,4-difluorocyclohexyl)amino]carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



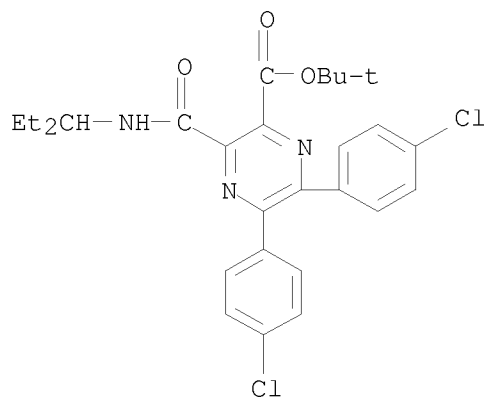
RN 811441-23-3 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(pentylamino)carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



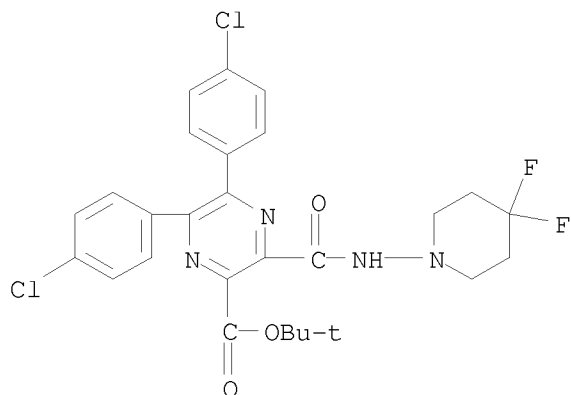
RN 811441-24-4 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[1-ethylpropyl)amino]carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



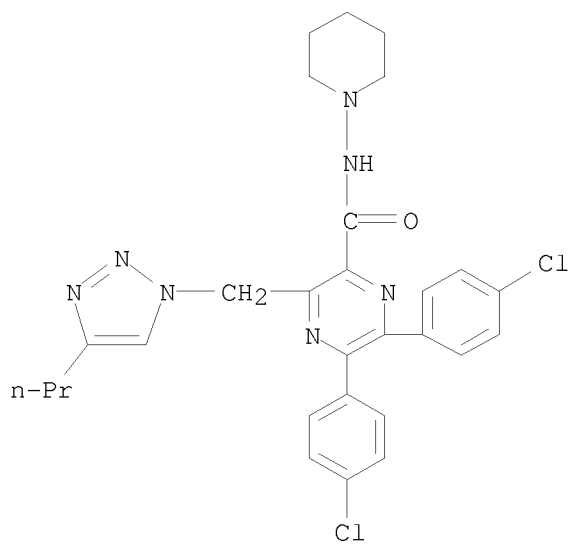
RN 811441-25-5 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[4,4-difluoro-1-piperidinyl)amino]carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



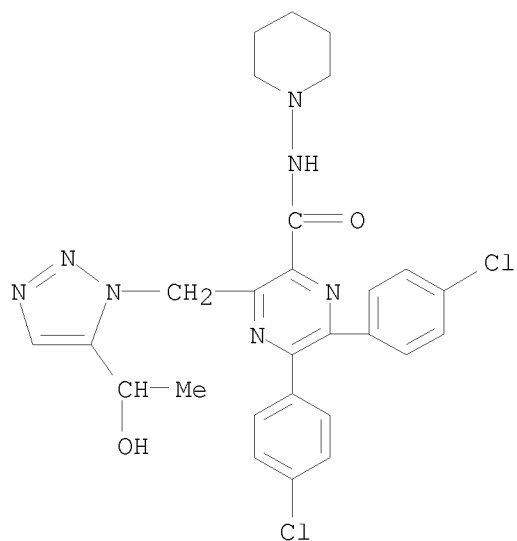
RN 811441-27-7 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-1-piperidinyl-3-[(4-propyl-1H-1,2,3-triazol-1-yl)methyl]- (9CI) (CA INDEX NAME)



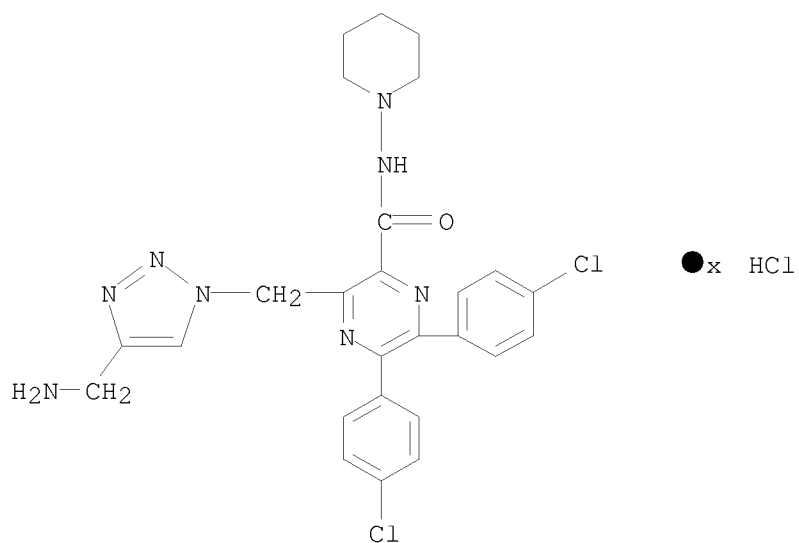
RN 811441-32-4 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-[[5-(1-hydroxyethyl)-1H-1,2,3-triazol-1-yl]methyl]-N-1-piperidinyl- (9CI) (CA INDEX NAME)



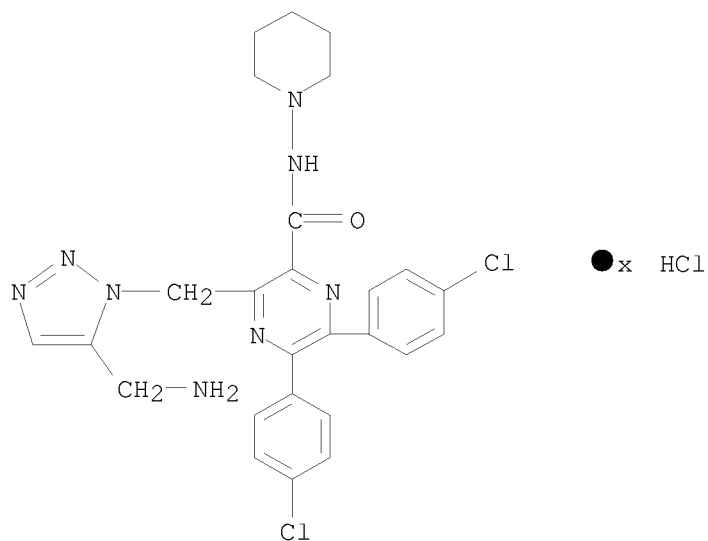
RN 811441-36-8 CAPLUS

CN Pyrazinecarboxamide, 3-[[4-(aminomethyl)-1H-1,2,3-triazol-1-yl]methyl]-5,6-bis(4-chlorophenyl)-N-1-piperidinyl-, hydrochloride (9CI) (CA INDEX NAME)



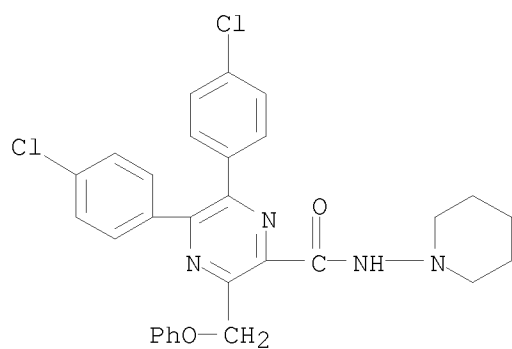
RN 811441-37-9 CAPLUS

CN Pyrazinecarboxamide, 3-[[5-(aminomethyl)-1H-1,2,3-triazol-1-yl]methyl]-5,6-bis(4-chlorophenyl)-N-1-piperidinyl-, hydrochloride (9CI) (CA INDEX NAME)



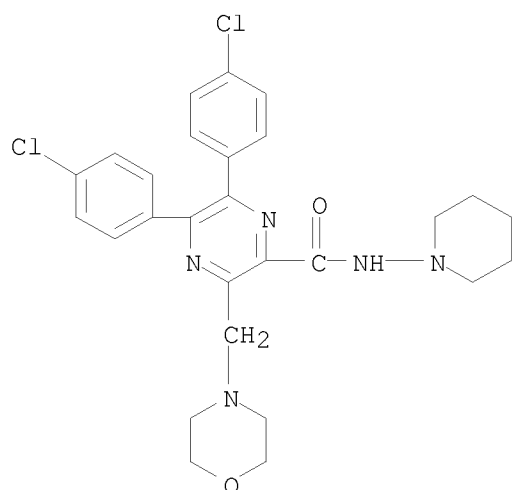
RN 811441-38-0 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-(phenoxymethyl)-N-1-piperidinyl- (9CI) (CA INDEX NAME)



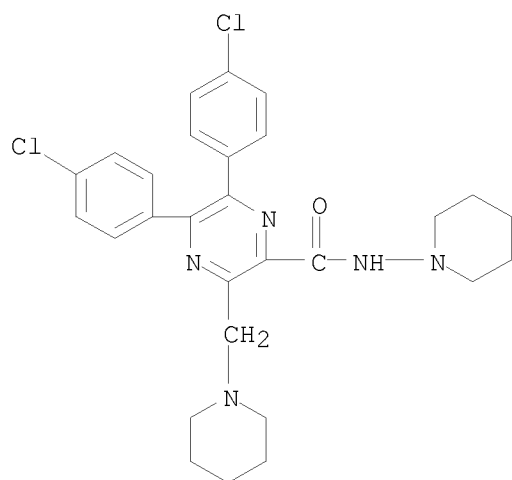
RN 811441-40-4 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-(4-morpholinylmethyl)-N-1-piperidinyl- (9CI) (CA INDEX NAME)



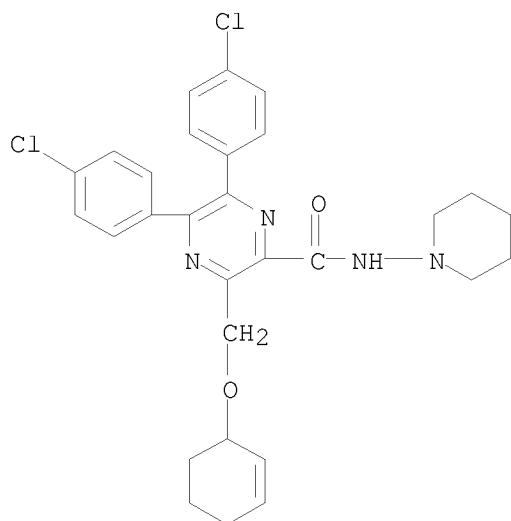
RN 811441-42-6 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-1-piperidinyl-3-(1-piperidinylmethyl)- (9CI) (CA INDEX NAME)



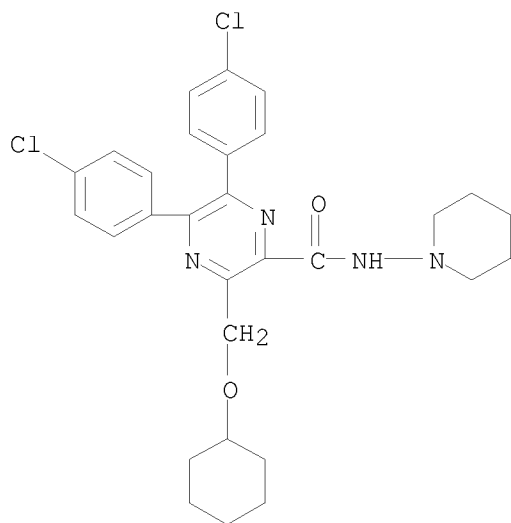
RN 811441-44-8 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-[(2-cyclohexen-1-yloxy)methyl]-N-1-piperidinyl- (9CI) (CA INDEX NAME)



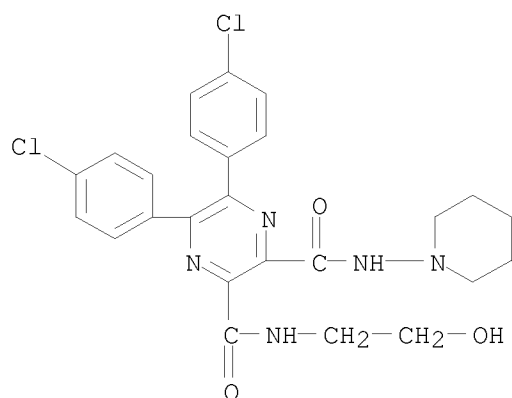
RN 811441-47-1 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-[(cyclohexyloxy)methyl]-N-1-piperidinyl- (9CI) (CA INDEX NAME)



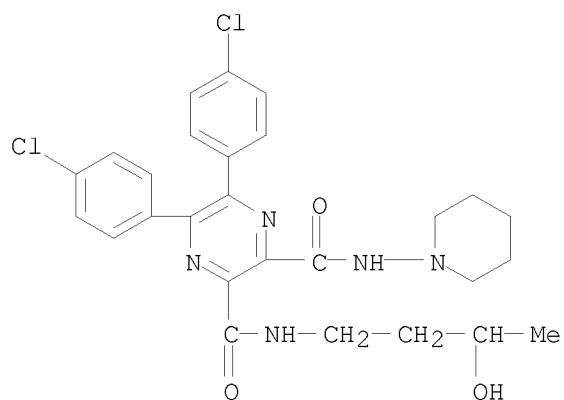
RN 811441-50-6 CAPLUS

CN 2,3-Pyrazinedicarboxamide, 5,6-bis(4-chlorophenyl)-N-(2-hydroxyethyl)-N'-1-piperidinyl- (9CI) (CA INDEX NAME)



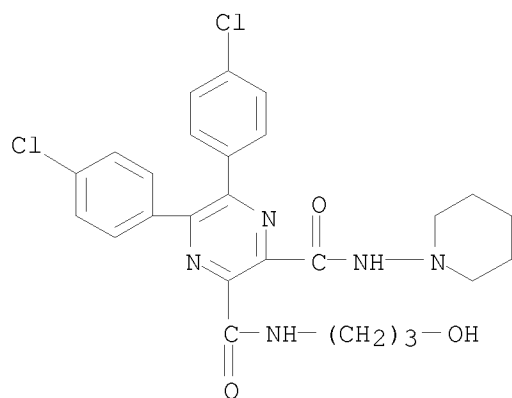
RN 811441-52-8 CAPLUS

CN 2,3-Pyrazinedicarboxamide, 5,6-bis(4-chlorophenyl)-N-(3-hydroxybutyl)-N'-1-piperidinyl- (9CI) (CA INDEX NAME)



RN 811441-53-9 CAPLUS

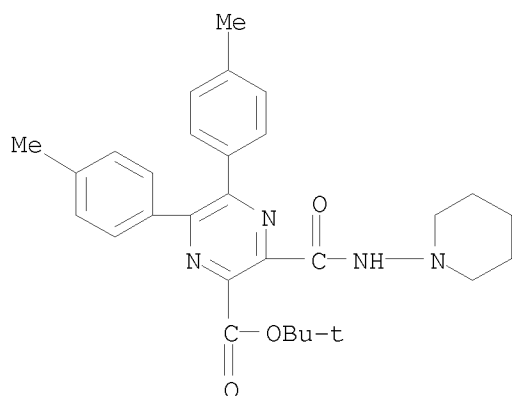
CN 2,3-Pyrazinedicarboxamide, 5,6-bis(4-chlorophenyl)-N-(3-hydroxypropyl)-N'-1-piperidinyl- (9CI) (CA INDEX NAME)



RN 811441-54-0 CAPLUS

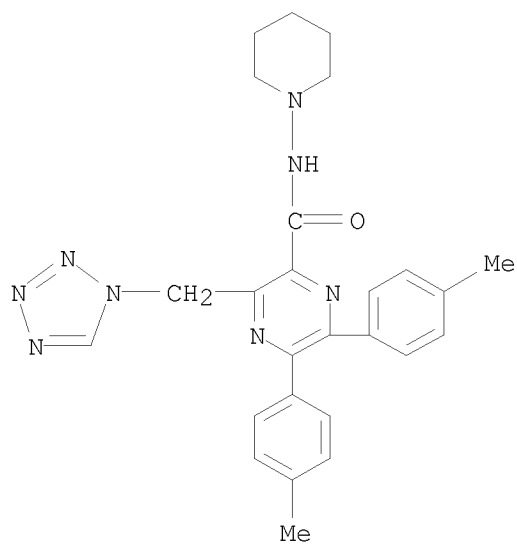
CN Pyrazinecarboxylic acid, 5,6-bis(4-methylphenyl)-3-[(1-piperidinylamino)carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

NAME)



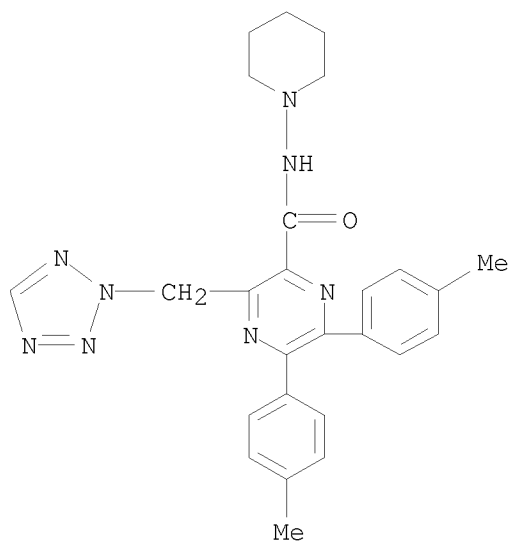
RN 811441-58-4 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-methylphenyl)-N-1-piperidinyl-3-(1H-tetrazol-1-ylmethyl)- (9CI) (CA INDEX NAME)



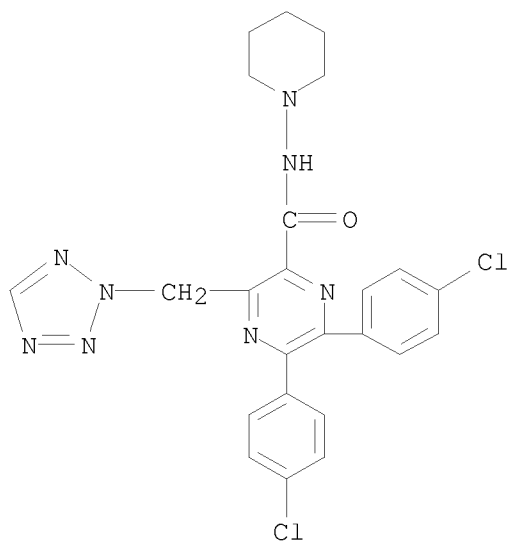
RN 811441-62-0 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-methylphenyl)-N-1-piperidinyl-3-(2H-tetrazol-2-ylmethyl)- (9CI) (CA INDEX NAME)



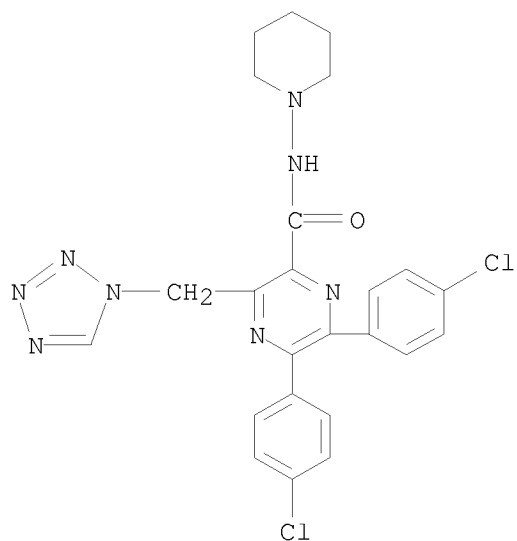
RN 811441-64-2 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-1-piperidinyl-3-(2H-tetrazol-2-ylmethyl)- (9CI) (CA INDEX NAME)



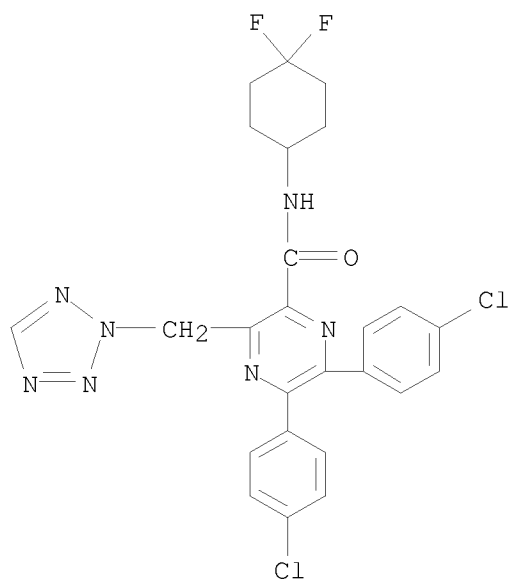
RN 811441-65-3 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-1-piperidinyl-3-(1H-tetrazol-1-ylmethyl)- (9CI) (CA INDEX NAME)



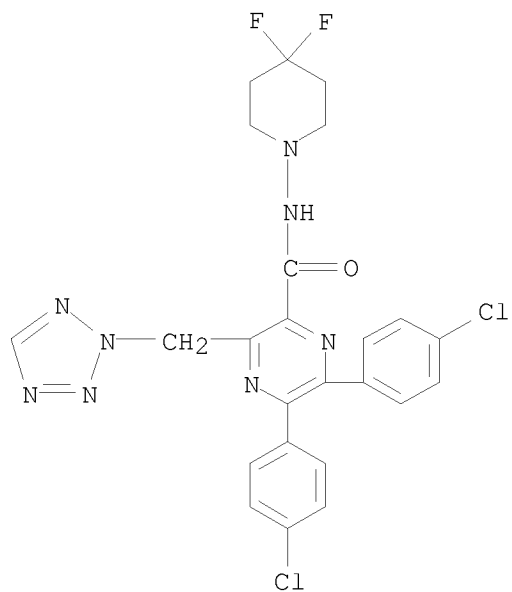
RN 811441-66-4 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-(4,4-difluorocyclohexyl)-3-(2H-tetrazol-2-ylmethyl)- (9CI) (CA INDEX NAME)



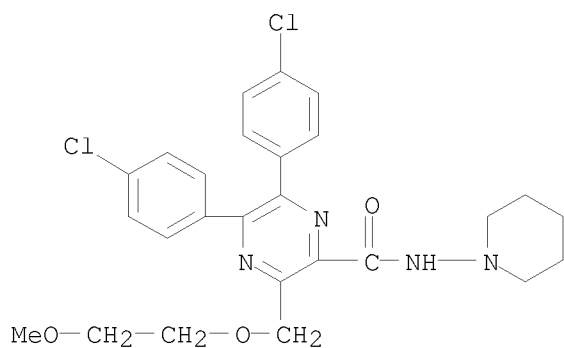
RN 811441-67-5 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-(4,4-difluoro-1-piperidinyl)-3-(2H-tetrazol-2-ylmethyl)- (9CI) (CA INDEX NAME)



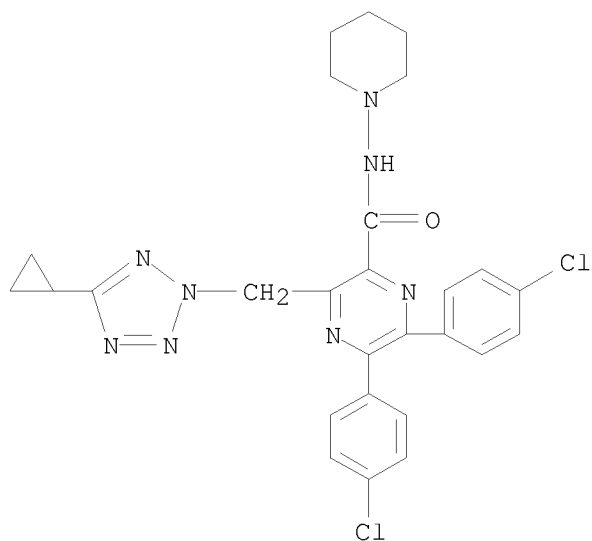
RN 811441-68-6 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-[(2-methoxyethoxy)methyl]-N-1-piperidinyl- (9CI) (CA INDEX NAME)



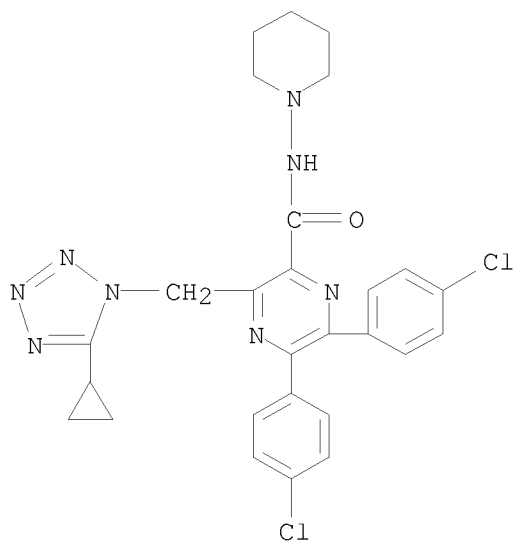
RN 811441-71-1 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-[(5-cyclopropyl-2H-tetrazol-2-yl)methyl]-N-1-piperidinyl- (9CI) (CA INDEX NAME)



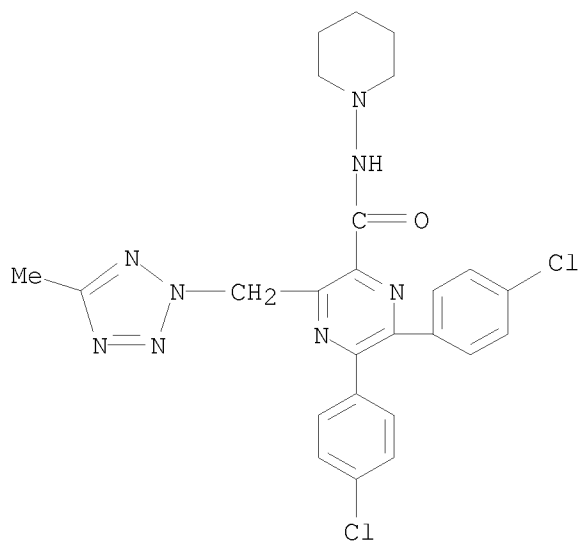
RN 811441-74-4 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-[(5-cyclopropyl-1H-tetrazol-1-yl)methyl]-N-1-piperidinyloxycarbonyl- (9CI) (CA INDEX NAME)



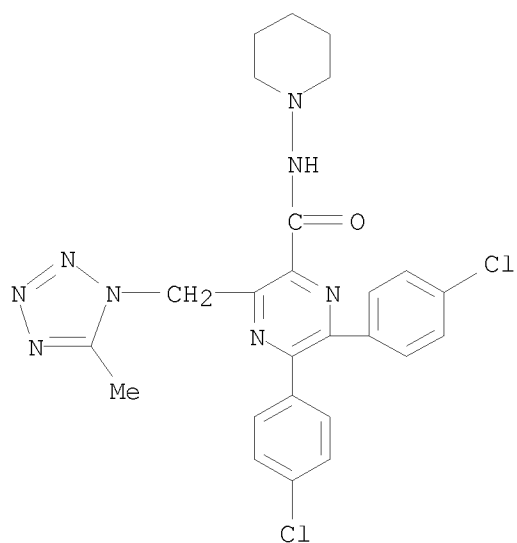
RN 811441-75-5 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-[(5-methyl-2H-tetrazol-2-yl)methyl]-N-1-piperidinyloxycarbonyl- (9CI) (CA INDEX NAME)



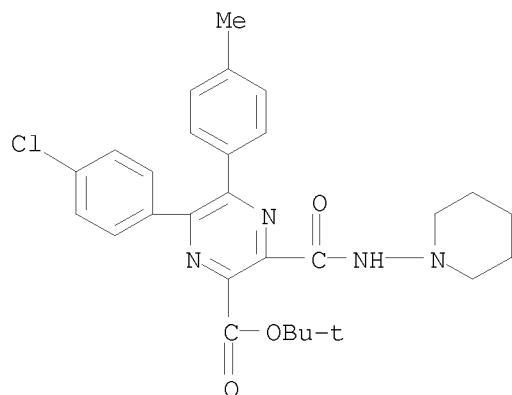
RN 811441-78-8 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-[(5-methyl-1H-tetrazol-1-yl)methyl]-N-1-piperidinyloxycarbonyl- (9CI) (CA INDEX NAME)



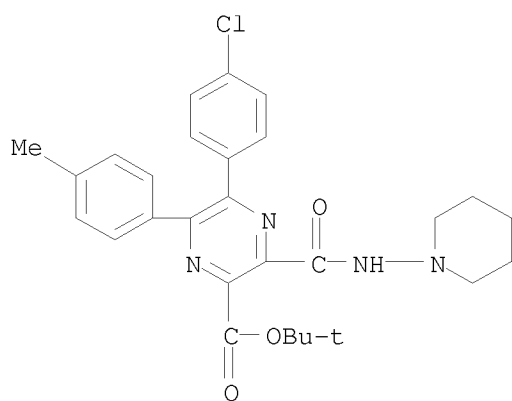
RN 811441-79-9 CAPLUS

CN Pyrazinecarboxylic acid, 6-(4-chlorophenyl)-5-(4-methylphenyl)-3-[(1-piperidinylamino)carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



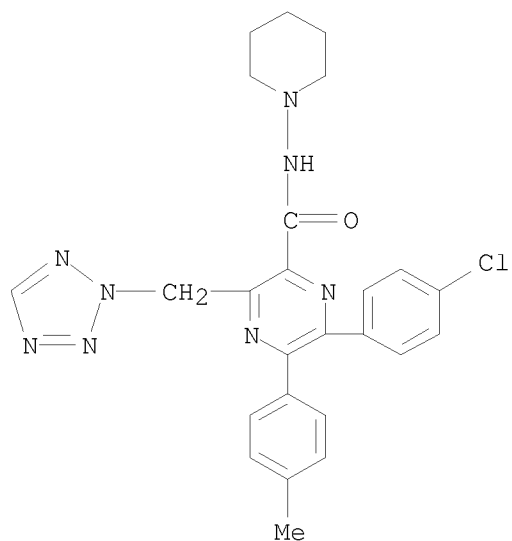
RN 811441-86-8 CAPLUS

CN Pyrazinecarboxylic acid, 5-(4-chlorophenyl)-6-(4-methylphenyl)-3-[(1-piperidinylamino)carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



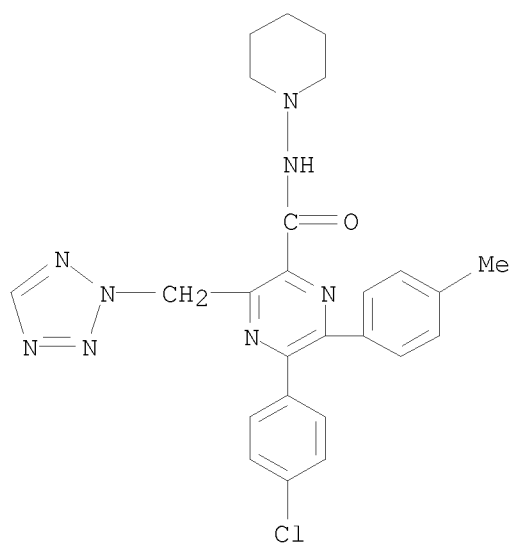
RN 811441-87-9 CAPLUS

CN Pyrazinecarboxamide, 6-(4-chlorophenyl)-5-(4-methylphenyl)-N-1-piperidinyl-3-(2H-tetrazol-2-ylmethyl)- (9CI) (CA INDEX NAME)



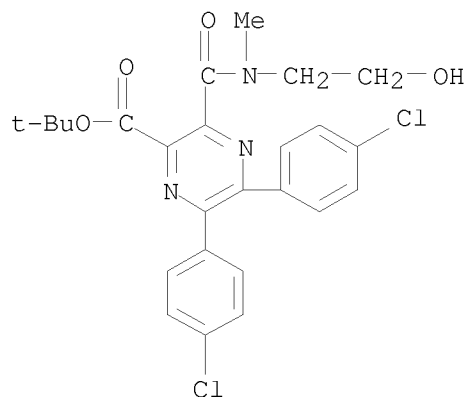
RN 811441-94-8 CAPLUS

CN Pyrazinecarboxamide, 5-(4-chlorophenyl)-6-(4-methylphenyl)-N-1-piperidinyl-3-(2H-tetrazol-2-ylmethyl)- (9CI) (CA INDEX NAME)



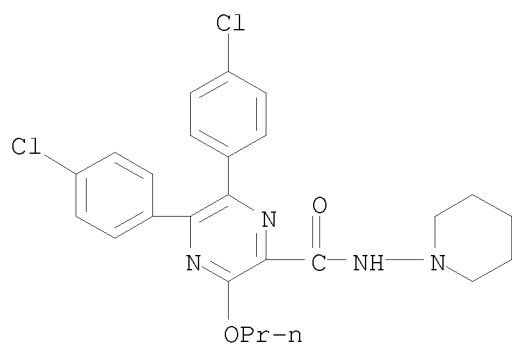
RN 811441-97-1 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[(2-hydroxyethyl)methylamino]carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



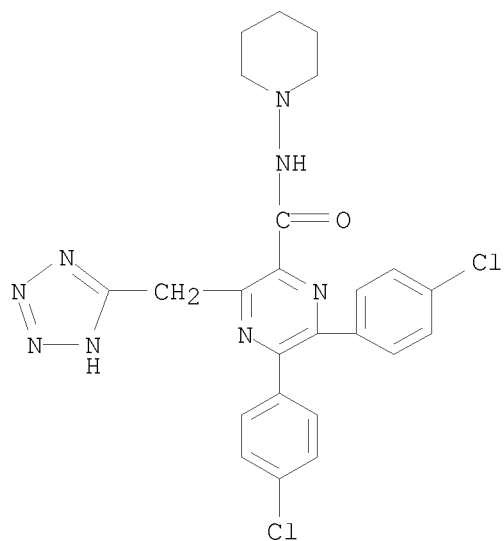
RN 811441-98-2 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-1-piperidinyl-3-propoxy-
(9CI) (CA INDEX NAME)

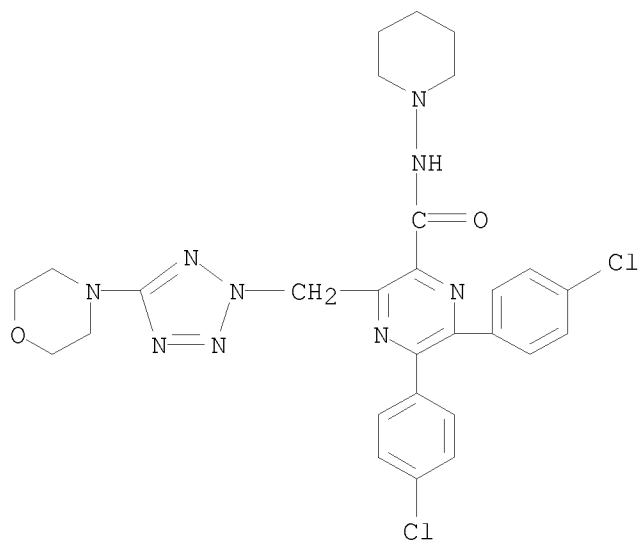


RN 811442-03-2 CAPLUS

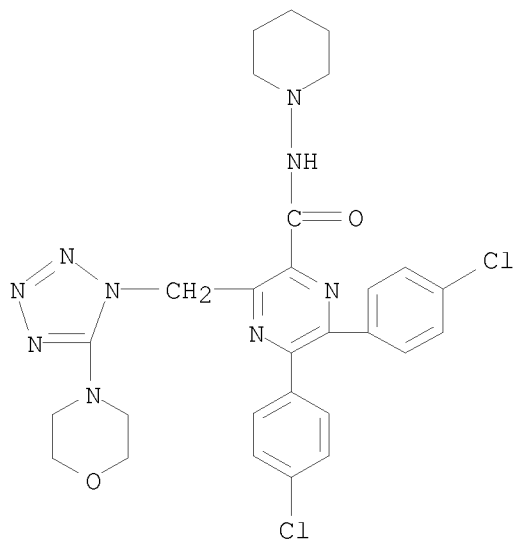
CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-1-piperidinyl-3-(1H-
tetrazol-5-ylmethyl)- (9CI) (CA INDEX NAME)



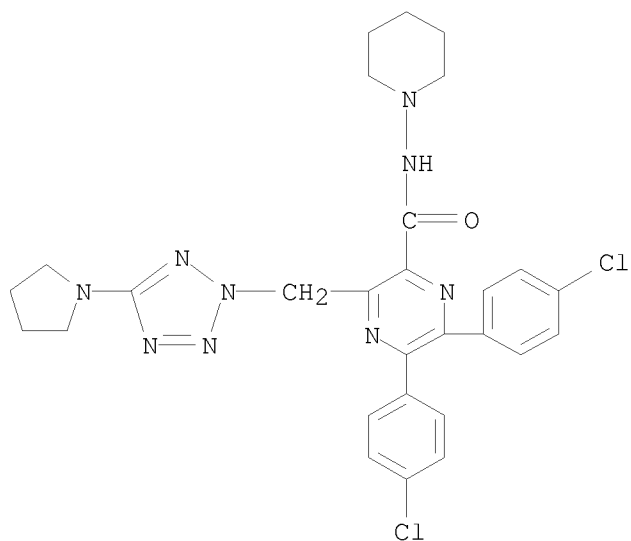
RN 811442-07-6 CAPLUS
 CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-[[5-(4-morpholinyl)-2H-tetrazol-2-yl]methyl]-N-1-piperidinyl- (9CI) (CA INDEX NAME)



RN 811442-08-7 CAPLUS
 CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-[[5-(4-morpholinyl)-1H-tetrazol-1-yl]methyl]-N-1-piperidinyl- (9CI) (CA INDEX NAME)

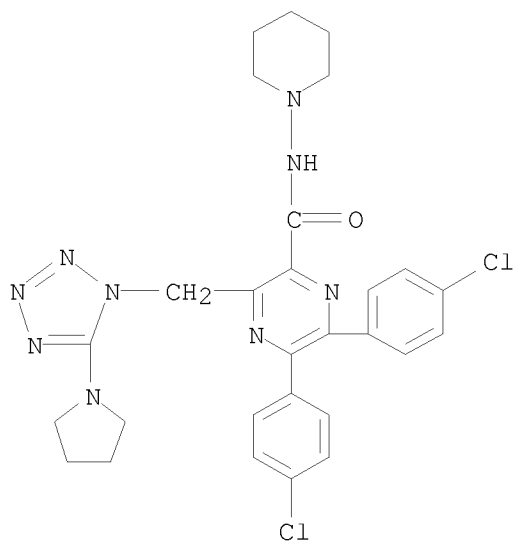


RN 811442-10-1 CAPLUS
 CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-1-piperidinyl-3-[[5-(1-pyrrolidinyl)-2H-tetrazol-2-yl]methyl]- (9CI) (CA INDEX NAME)



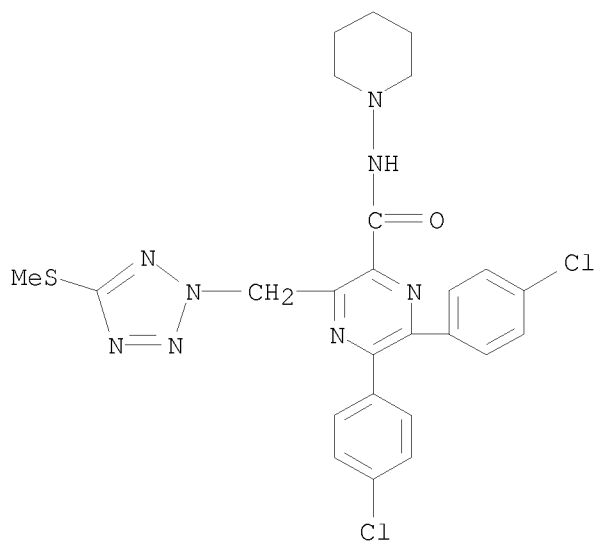
RN 811442-11-2 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-1-piperidinyl-3-[[5-(1-pyrrolidinyl)-1H-tetrazol-1-yl]methyl]- (9CI) (CA INDEX NAME)



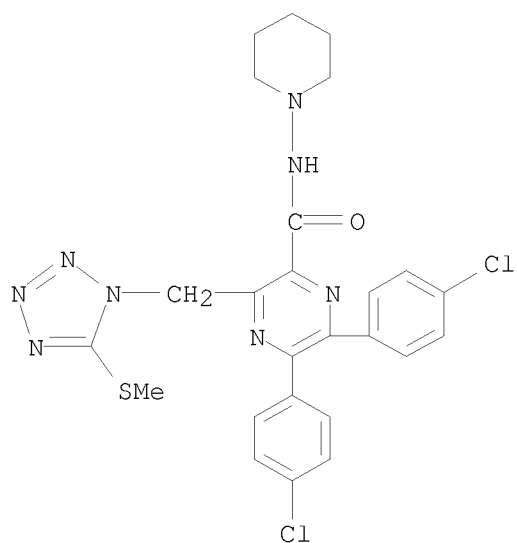
RN 811442-12-3 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-[[5-(methylthio)-2H-tetrazol-2-yl]methyl]-N-1-piperidinyl- (9CI) (CA INDEX NAME)



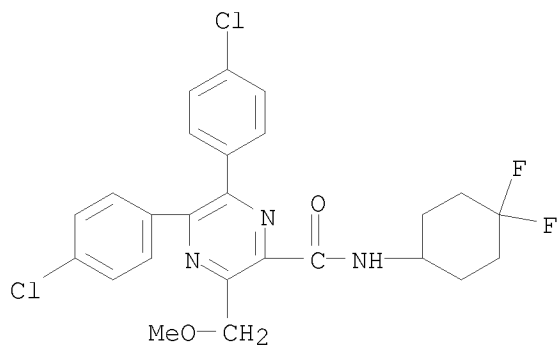
RN 811442-13-4 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-[[5-(methylthio)-1H-tetrazol-1-yl]methyl]-N-1-piperidinyl- (9CI) (CA INDEX NAME)



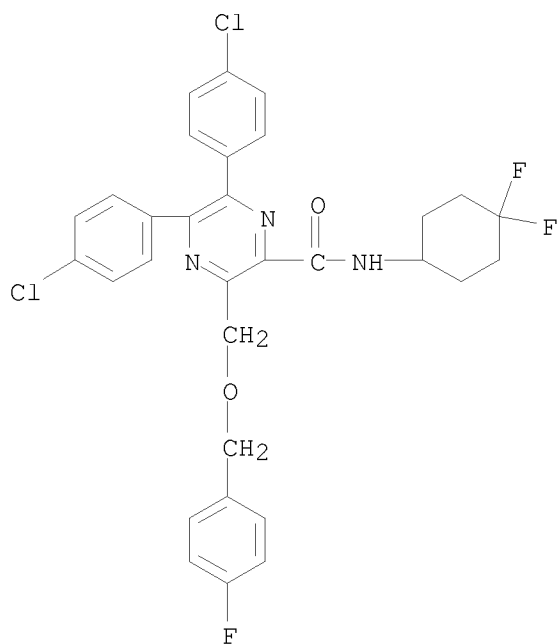
RN 811442-14-5 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-(4,4-difluorocyclohexyl)-3-(methoxymethyl)- (9CI) (CA INDEX NAME)



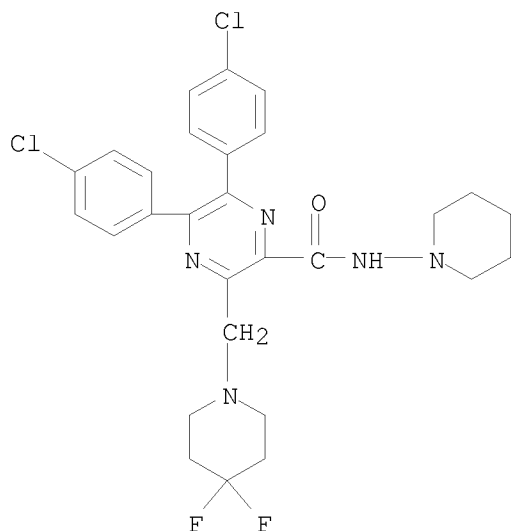
RN 811442-16-7 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-(4,4-difluorocyclohexyl)-3-[[4-fluorophenyl)methoxy]methyl]- (9CI) (CA INDEX NAME)



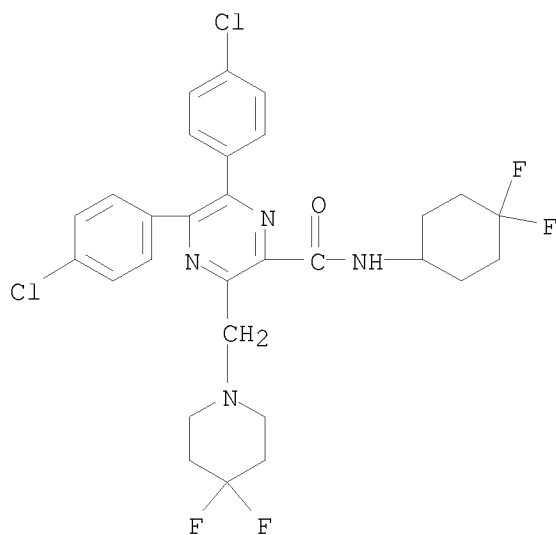
RN 811442-19-0 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-[(4,4-difluoro-1-piperidinyl)methyl]-N-1-piperidinyl- (9CI) (CA INDEX NAME)



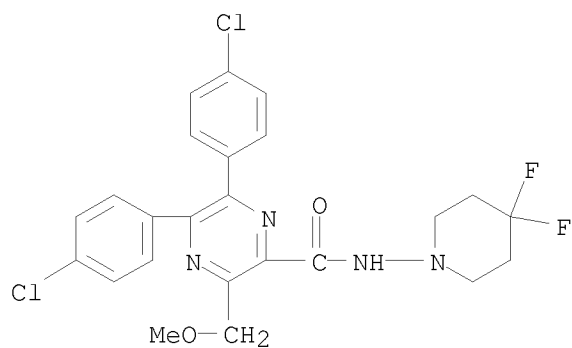
RN 811442-21-4 CAPLUS

CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-(4,4-difluorocyclohexyl)-3-[(4,4-difluoro-1-piperidinyl)methyl]- (9CI) (CA INDEX NAME)

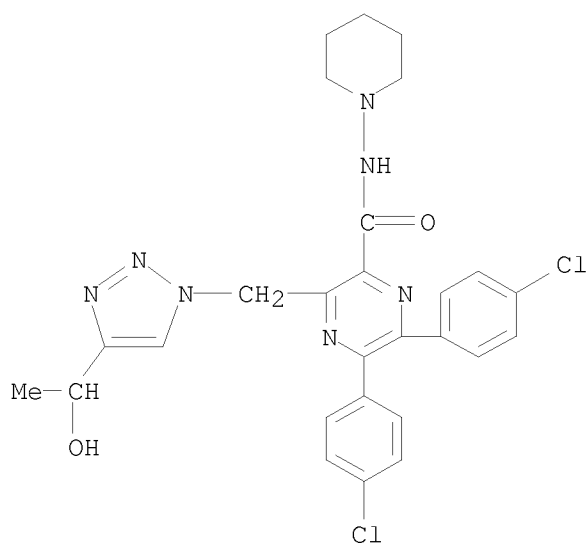


RN 811442-22-5 CAPLUS

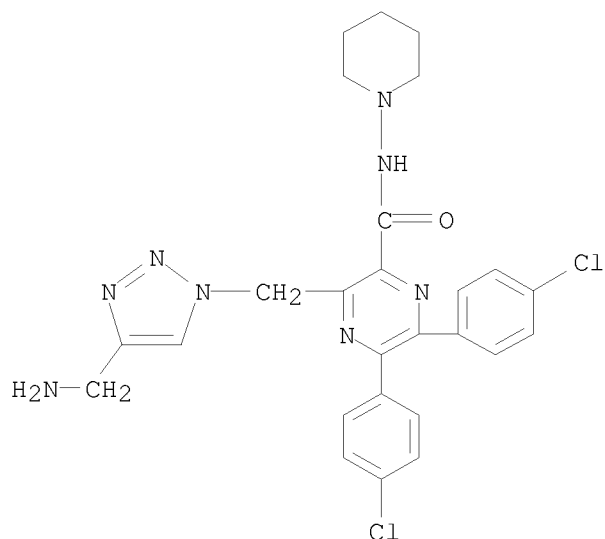
CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-N-(4,4-difluoro-1-piperidinyl)-3-(methoxymethyl)- (9CI) (CA INDEX NAME)



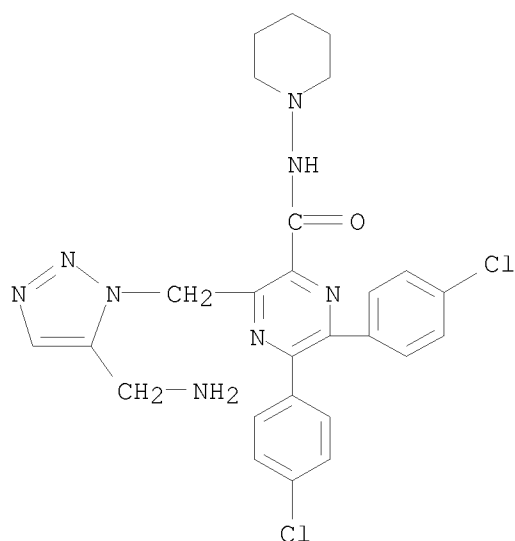
RN 811442-24-7 CAPLUS
 CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-[[4-(1-hydroxyethyl)-1H-1,2,3-triazol-1-yl]methyl]-N-1-piperidiny- (9CI) (CA INDEX NAME)



RN 811442-25-8 CAPLUS
 CN Pyrazinecarboxamide, 3-[[4-(aminomethyl)-1H-1,2,3-triazol-1-yl]methyl]-5,6-bis(4-chlorophenyl)-N-1-piperidiny- (9CI) (CA INDEX NAME)



RN 811442-26-9 CAPLUS
 CN Pyrazinecarboxamide, 3-[[5-(aminomethyl)-1H-1,2,3-triazol-1-yl]methyl]-5,6-bis(4-chlorophenyl)-N-1-piperidinyl- (9CI) (CA INDEX NAME)



IT 52197-13-4P, 5,6-Bis(4-methylphenyl)pyrazine-2,3-dicarbonitrile
 810685-47-3P, 5,6-Bis(4-chlorophenyl)pyrazine-2,3-dicarbonitrile
 810685-49-5P, 5,6-Bis(4-chlorophenyl)pyrazine-2,3-dicarboxylic acid 811436-88-1P, 3-(tert-Butoxycarbonyl)-5,6-bis(4-chlorophenyl)pyrazine-2-carboxylic acid 811437-00-0P, Ethyl 5,6-bis(4-chlorophenyl)-3-[(2H-tetrazol-2-yl)methyl]pyrazine-2-carboxylate 811437-01-1P, Ethyl 5,6-bis(4-chlorophenyl)-3-[(1H-tetrazol-1-yl)methyl]pyrazine-2-carboxylate 811437-02-2P, Ethyl 5,6-bis(4-chlorophenyl)-3-(hydroxymethyl)pyrazine-2-carboxylate 811437-03-3P, 5,6-Bis(4-chlorophenyl)-3-[(2H-tetrazol-2-yl)methyl]pyrazine-2-carboxylic acid 811441-05-1P, 5,6-Bis(4-chlorophenyl)-3-(ethoxycarbonyl)pyrazine-2-carboxylic acid 811441-06-2P, Ethyl 3-(tert-butoxymethyl)-5,6-bis(4-chlorophenyl)pyrazine-2-carboxylate 811441-07-3P,

3-(tert-Butoxymethyl)-5,6-bis(4-chlorophenyl)pyrazine-2-carboxylic acid
811441-09-5P, Ethyl 5,6-bis(4-chlorophenyl)-3-formylpyrazine-2-
carboxylate 811441-10-8P, Ethyl 5,6-bis(4-chlorophenyl)-3-
[(cyclohexylidene)methyl]pyrazine-2-carboxylate 811441-11-9P,
5,6-Bis(4-chlorophenyl)-3-[(cyclohexylidene)methyl]pyrazine-2-carboxylic
acid 811441-13-1P, Ethyl 5,6-bis(4-chlorophenyl)-3-
[[methylsulfonyl]oxy]methyl]pyrazine-2-carboxylate 811441-14-2P
, Ethyl 5,6-bis(4-chlorophenyl)-3-(cyanomethyl)pyrazine-2-carboxylate
811441-15-3P, 5,6-Bis(4-chlorophenyl)-3-(cyanomethyl)pyrazine-2-
carboxylic acid 811441-18-6P, 5,6-Bis(4-chlorophenyl)-3-(1-
methoxyethyl)pyrazine-2-carboxylic acid 811441-20-0P,
5,6-Bis(4-chlorophenyl)-3-(methoxymethyl)pyrazine-2-carboxylic acid
811441-21-1P, Methyl 5,6-bis(4-chlorophenyl)-3-(1-
methoxyethyl)pyrazine-2-carboxylate 811441-28-8P, Ethyl
3-(azidomethyl)-5,6-bis(4-chlorophenyl)pyrazine-2-carboxylate
811441-29-9P, 3-(Azidomethyl)-5,6-bis(4-chlorophenyl)pyrazine-2-
carboxylic acid 811441-30-2P, 3-(Azidomethyl)-5,6-bis(4-
chlorophenyl)pyrazine-2-carbonyl chloride 811441-31-3P,
3-(Azidomethyl)-5,6-bis(4-chlorophenyl)-N-(piperidin-1-yl)pyrazine-2-
carboxamide 811441-39-1P, Ethyl 5,6-bis(4-chlorophenyl)-3-
(phenoxymethyl)pyrazine-2-carboxylate 811441-41-5P, Ethyl
5,6-bis(4-chlorophenyl)-3-[(morpholin-4-yl)methyl]pyrazine-2-carboxylate
811441-43-7P, Ethyl 5,6-bis(4-chlorophenyl)-3-[(piperidin-1-
yl)methyl]pyrazine-2-carboxylate 811441-45-9P,
5,6-Bis(4-chlorophenyl)-3-[[cyclohex-2-en-1-yl]oxy]methyl]pyrazine-2-
carboxylic acid 811441-46-0P, Methyl 5,6-bis(4-chlorophenyl)-3-
[[cyclohex-2-en-1-yl]oxy]methyl]pyrazine-2-carboxylate
811441-48-2P, Ethyl 3-(bromomethyl)-5,6-bis(4-
chlorophenyl)pyrazine-2-carboxylate 811441-49-3P, Methyl
5,6-bis(4-chlorophenyl)-3-[(cyclohexyloxy)methyl]pyrazine-2-carboxylate
811441-55-1P, 5,6-Bis(4-methylphenyl)pyrazine-2,3-dicarboxylic
acid 811441-57-3P, 3-(tert-Butoxycarbonyl)-5,6-bis(4-
methylphenyl)pyrazine-2-carboxylic acid 811441-59-5P,
3-(Ethoxycarbonyl)-5,6-bis(4-methylphenyl)pyrazine-2-carboxylic acid
811441-60-8P, Ethyl 3-(hydroxymethyl)-5,6-bis(4-
methylphenyl)pyrazine-2-carboxylate 811441-61-9P, Ethyl
5,6-bis(4-methylphenyl)-3-[(1H-tetrazol-1-yl)methyl]pyrazine-2-carboxylate
811441-63-1P, Ethyl 5,6-bis(4-methylphenyl)-3-[(2H-tetrazol-2-
yl)methyl]pyrazine-2-carboxylate 811441-69-7P,
5,6-Bis(4-chlorophenyl)-3-[(2-methoxyethoxy)methyl]pyrazine-2-carboxylic
acid 811441-70-0P, Methyl 5,6-bis(4-chlorophenyl)-3-[(2-
methoxyethoxy)methyl]pyrazine-2-carboxylate 811441-72-2P, Ethyl
5,6-bis(4-chlorophenyl)-3-[(5-cyclopropyl-2H-tetrazol-2-yl)methyl]pyrazine-
2-carboxylate 811441-73-3P, Ethyl 5,6-bis(4-chlorophenyl)-3-[(5-
cyclopropyl-1H-tetrazol-1-yl)methyl]pyrazine-2-carboxylate
811441-76-6P, Ethyl 5,6-bis(4-chlorophenyl)-3-[(5-methyl-2H-
tetrazol-2-yl)methyl]pyrazine-2-carboxylate 811441-77-7P, Ethyl
5,6-bis(4-chlorophenyl)-3-[(5-methyl-1H-tetrazol-1-yl)methyl]pyrazine-2-
carboxylate 811441-80-2P, 5-(4-Chlorophenyl)-6-(4-
methylphenyl)pyrazine-2,3-dicarbonitrile 811441-81-3P,
5-(4-Chlorophenyl)-6-(4-methylphenyl)pyrazine-2,3-dicarboxylic acid
811441-82-4P 811441-84-6P, 3-(tert-Butoxycarbonyl)-5-(4-
chlorophenyl)-6-(4-methylphenyl)pyrazine-2-carboxylic acid
811441-85-7P, 3-(tert-Butoxycarbonyl)-6-(4-chlorophenyl)-5-(4-
methylphenyl)pyrazine-2-carboxylic acid 811441-88-0P,
5-(4-Chlorophenyl)-3-(ethoxycarbonyl)-6-(4-methylphenyl)pyrazine-2-
carboxylic acid 811441-89-1P, 6-(4-Chlorophenyl)-3-
(ethoxycarbonyl)-5-(4-methylphenyl)pyrazine-2-carboxylic acid
811441-90-4P, Ethyl 6-(4-chlorophenyl)-3-(hydroxymethyl)-5-(4-
methylphenyl)pyrazine-2-carboxylate 811441-91-5P, Ethyl
5-(4-chlorophenyl)-3-(hydroxymethyl)-6-(4-methylphenyl)pyrazine-2-
carboxylate 811441-92-6P, Ethyl 6-(4-chlorophenyl)-5-(4-

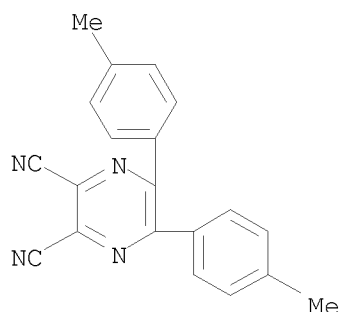
methylphenyl)-3-[(2H-tetrazol-2-yl)methyl]pyrazine-2-carboxylate
 811441-95-9P, Ethyl 5-(4-chlorophenyl)-6-(4-methylphenyl)-3-[(2H-
 tetrazol-2-yl)methyl]pyrazine-2-carboxylate 811441-99-3P,
 5,6-Bis(4-chlorophenyl)-3-hydroxypyrazine-2-carboxylic acid methyl ester
 811442-01-0P, 5,6-Bis(4-chlorophenyl)-3-propoxypyrazine-2-
 carboxylic acid methyl ester 811442-02-1P, 5,6-Bis(4-
 chlorophenyl)-3-propoxypyrazine-2-carboxylic acid 811442-09-8P,
 5,6-Bis(4-chlorophenyl)-3-(hydroxymethyl)-N-(piperidin-1-yl)pyrazine-2-
 carboxamide 811442-15-6P, Methyl 5,6-bis(4-chlorophenyl)-3-
 (methoxymethyl)pyrazine-2-carboxylate 811442-17-8P,
 5,6-Bis(4-chlorophenyl)-3-[[[4-fluorobenzyl)oxy]methyl]pyrazine-2-
 carboxylic acid 811442-18-9P, Methyl 5,6-bis(4-chlorophenyl)-3-
 [[[4-fluorobenzyl)oxy]methyl]pyrazine-2-carboxylate 811442-20-3P
 , Ethyl 5,6-bis(4-chlorophenyl)-3-[(4,4-difluoropiperidin-1-
 yl)methyl]pyrazine-2-carboxylate

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)

(intermediate; preparation of 3-substituted 5,6-diarylpyrazine-2-carboxamide
 and 2-sulfonamide derivs. as CB1 modulators)

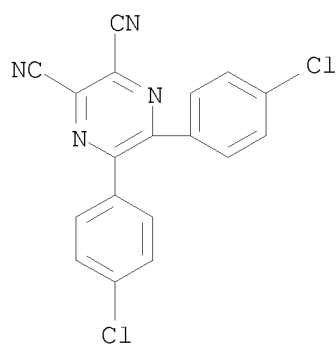
RN 52197-13-4 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-methylphenyl)- (CA INDEX NAME)



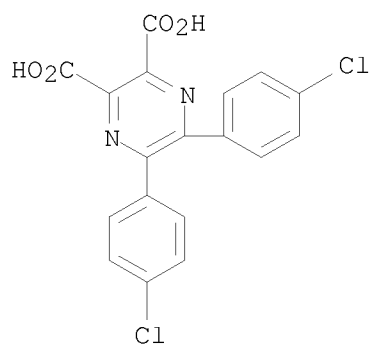
RN 810685-47-3 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-chlorophenyl)- (CA INDEX NAME)



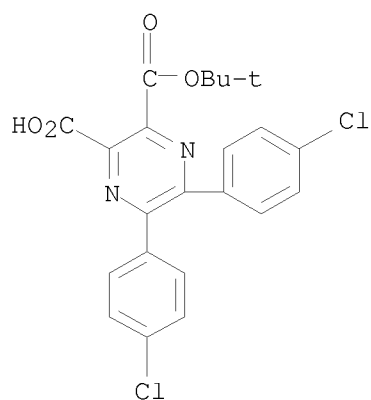
RN 810685-49-5 CAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)- (CA INDEX NAME)



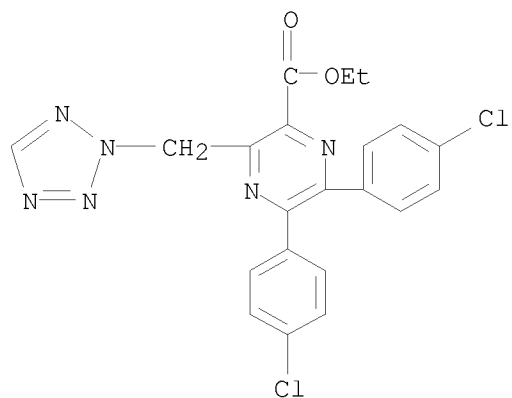
RN 811436-88-1 CAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)-, mono(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



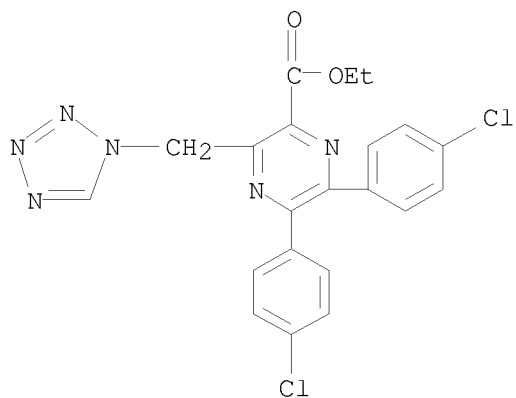
RN 811437-00-0 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(2H-tetrazol-2-ylmethyl)-, ethyl ester (9CI) (CA INDEX NAME)



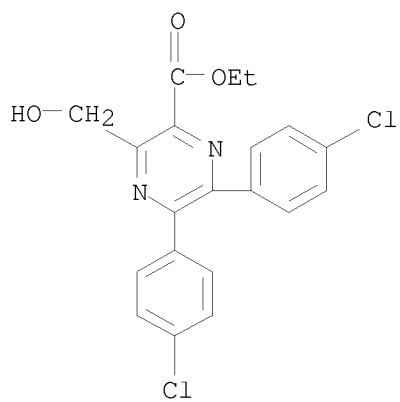
RN 811437-01-1 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(1H-tetrazol-1-ylmethyl)-, ethyl ester (9CI) (CA INDEX NAME)



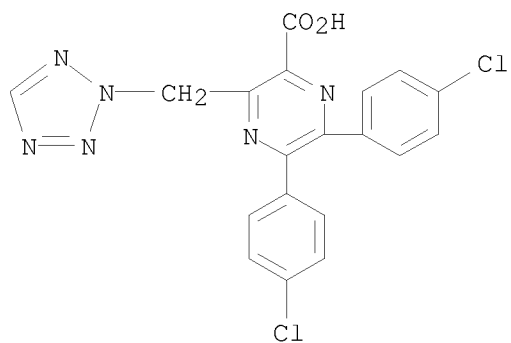
RN 811437-02-2 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(hydroxymethyl)-, ethyl ester (9CI) (CA INDEX NAME)



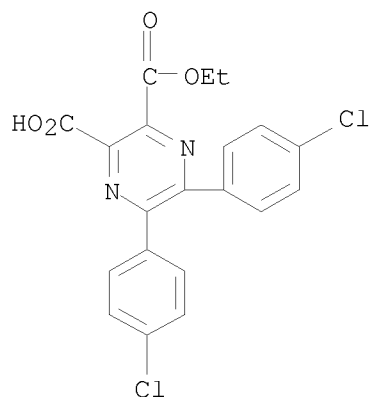
RN 811437-03-3 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(2H-tetrazol-2-ylmethyl)- (9CI) (CA INDEX NAME)

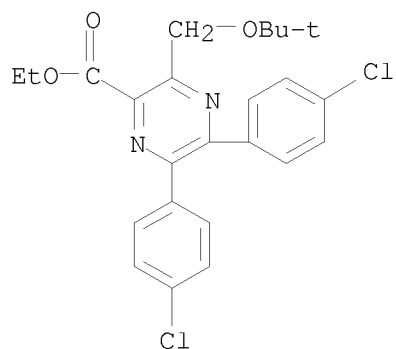


RN 811441-05-1 CAPLUS

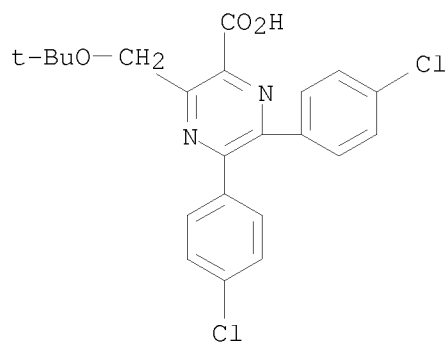
CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-chlorophenyl)-, monoethyl ester (9CI) (CA INDEX NAME)



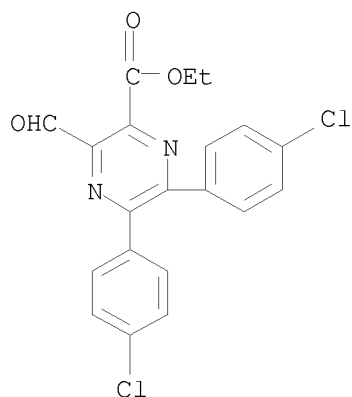
RN 811441-06-2 CAPLUS
 CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(1,1-dimethylethoxy)methyl]-, ethyl ester (9CI) (CA INDEX NAME)



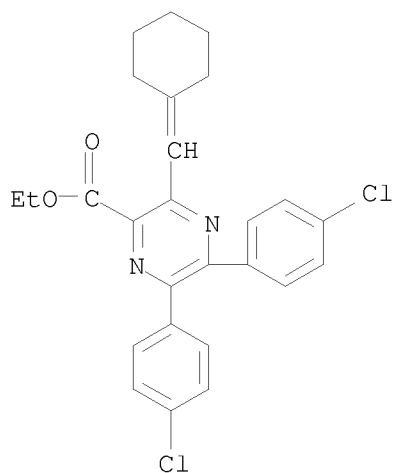
RN 811441-07-3 CAPLUS
 CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(1,1-dimethylethoxy)methyl]- (9CI) (CA INDEX NAME)



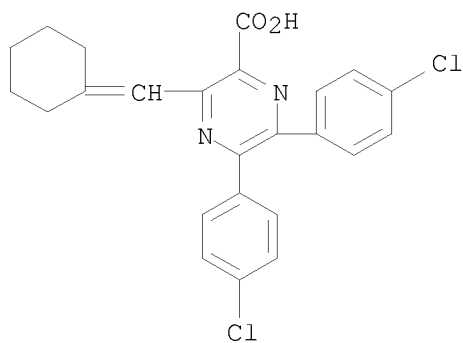
RN 811441-09-5 CAPLUS
 CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-formyl-, ethyl ester (9CI) (CA INDEX NAME)



RN 811441-10-8 CAPLUS
 CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(cyclohexylidenemethyl)-, ethyl ester (9CI) (CA INDEX NAME)

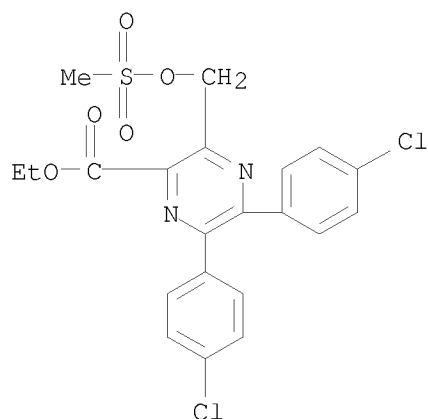


RN 811441-11-9 CAPLUS
 CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(cyclohexylidenemethyl)-(9CI) (CA INDEX NAME)



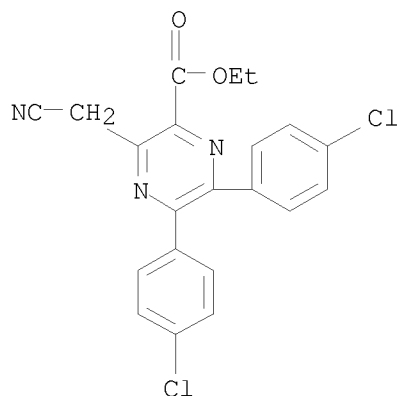
RN 811441-13-1 CAPLUS
 CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-

[[[(methylsulfonyl)oxy]methyl]-, ethyl ester (9CI) (CA INDEX NAME)



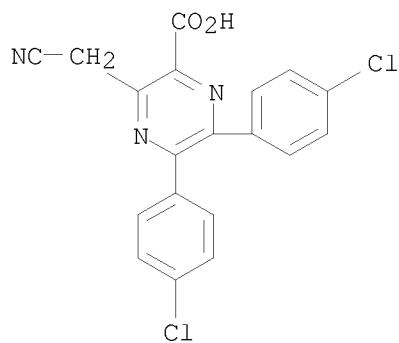
RN 811441-14-2 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(cyanomethyl)-, ethyl ester (9CI) (CA INDEX NAME)



RN 811441-15-3 CAPLUS

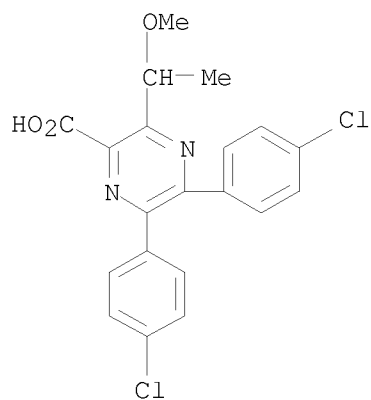
CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(cyanomethyl)- (9CI) (CA INDEX NAME)



RN 811441-18-6 CAPLUS

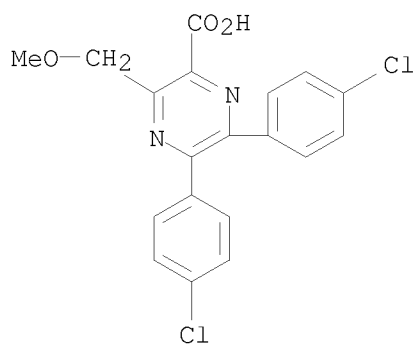
CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(1-methoxyethyl)- (9CI)

(CA INDEX NAME)



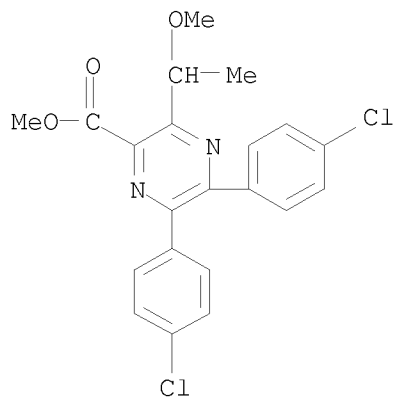
RN 811441-20-0 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(methoxymethyl)- (9CI)
(CA INDEX NAME)



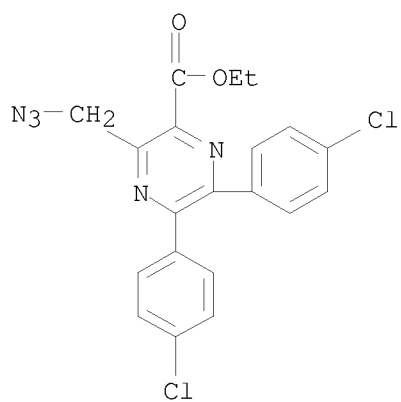
RN 811441-21-1 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(1-methoxyethyl)-,
methyl ester (9CI) (CA INDEX NAME)

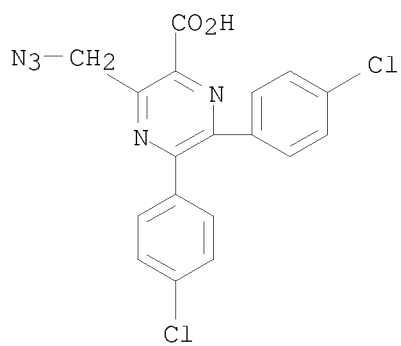


RN 811441-28-8 CAPLUS

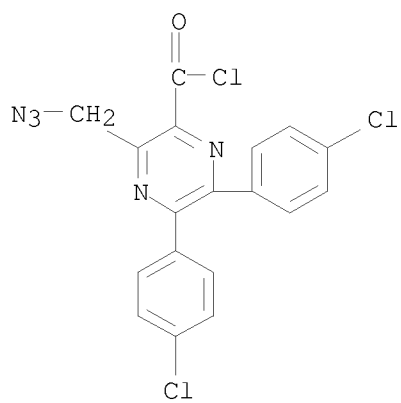
CN Pyrazinecarboxylic acid, 3-(azidomethyl)-5,6-bis(4-chlorophenyl)-, ethyl
ester (9CI) (CA INDEX NAME)



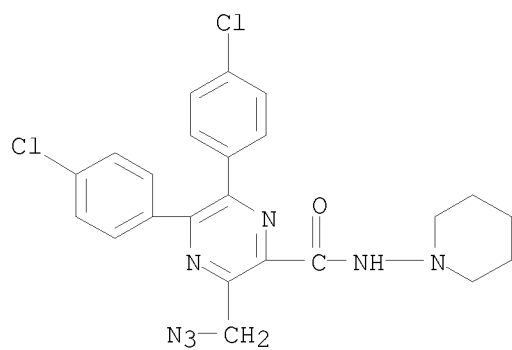
RN 811441-29-9 CAPLUS
 CN Pyrazinecarboxylic acid, 3-(azidomethyl)-5,6-bis(4-chlorophenyl)- (9CI)
 (CA INDEX NAME)



RN 811441-30-2 CAPLUS
 CN Pyrazinecarbonyl chloride, 3-(azidomethyl)-5,6-bis(4-chlorophenyl)- (9CI)
 (CA INDEX NAME)

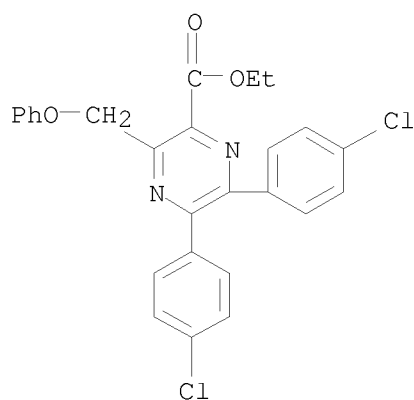


RN 811441-31-3 CAPLUS
 CN Pyrazinecarboxamide, 3-(azidomethyl)-5,6-bis(4-chlorophenyl)-N-1-piperidinyl- (9CI) (CA INDEX NAME)



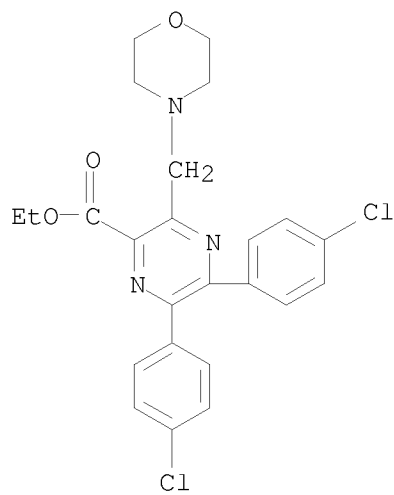
RN 811441-39-1 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(phoxymethyl)-, ethyl ester (9CI) (CA INDEX NAME)



RN 811441-41-5 CAPLUS

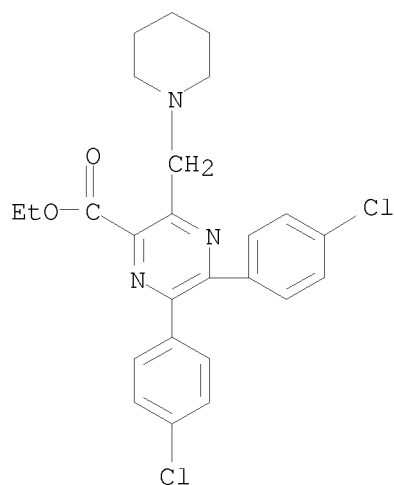
CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(4-morpholinylmethyl)-, ethyl ester (9CI) (CA INDEX NAME)



RN 811441-43-7 CAPLUS

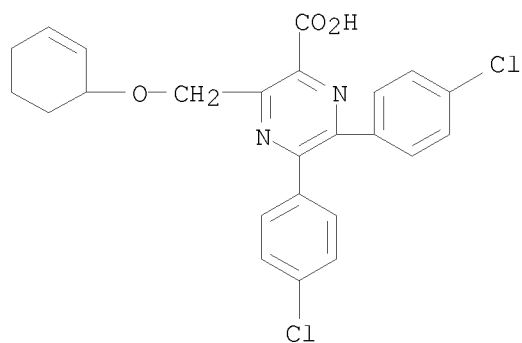
CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(1-piperidinylmethyl)-,

ethyl ester (9CI) (CA INDEX NAME)



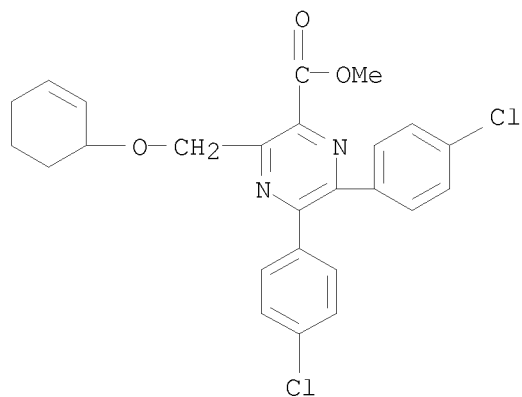
RN 811441-45-9 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(2-cyclohexen-1-yloxy)methyl]- (9CI) (CA INDEX NAME)



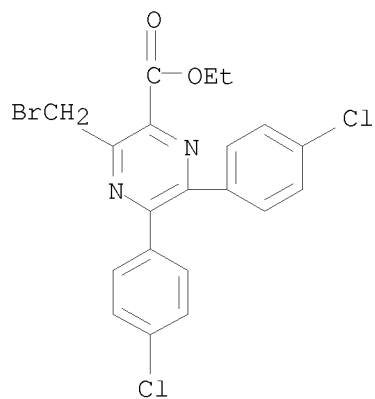
RN 811441-46-0 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(2-cyclohexen-1-yloxy)methyl]-, methyl ester (9CI) (CA INDEX NAME)



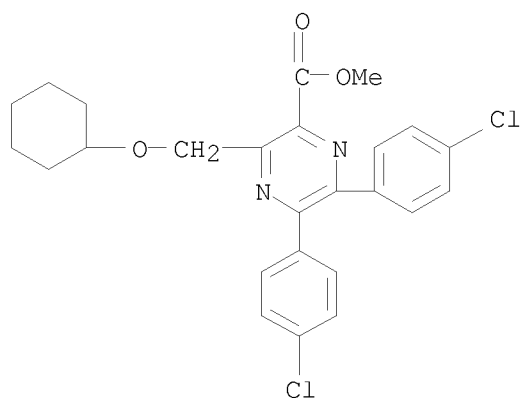
RN 811441-48-2 CAPLUS

CN Pyrazinecarboxylic acid, 3-(bromomethyl)-5,6-bis(4-chlorophenyl)-, ethyl ester (9CI) (CA INDEX NAME)



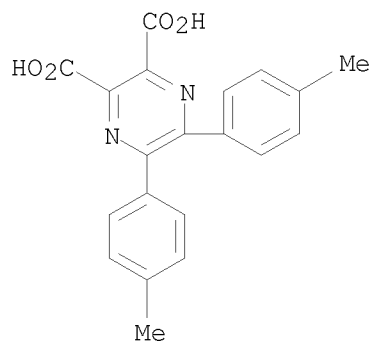
RN 811441-49-3 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(cyclohexyloxy)methyl]-, methyl ester (9CI) (CA INDEX NAME)



RN 811441-55-1 CAPLUS

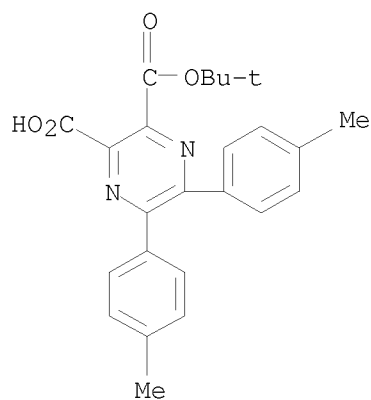
CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-methylphenyl)- (CA INDEX NAME)



RN 811441-57-3 CAPLUS

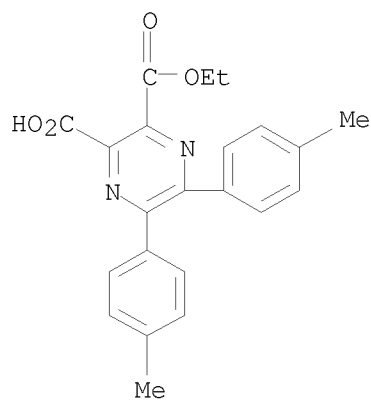
CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-methylphenyl)-,

mono(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



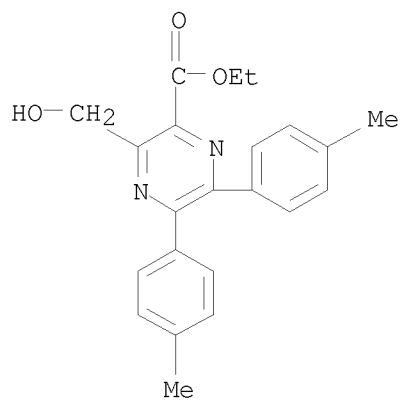
RN 811441-59-5 CAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-bis(4-methylphenyl)-, monoethyl ester (9CI) (CA INDEX NAME)



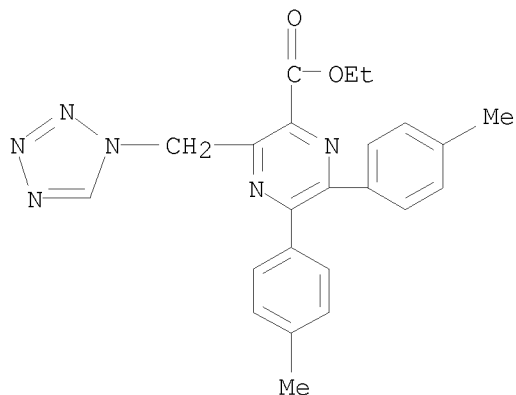
RN 811441-60-8 CAPLUS

CN Pyrazinecarboxylic acid, 3-(hydroxymethyl)-5,6-bis(4-methylphenyl)-, ethyl ester (9CI) (CA INDEX NAME)



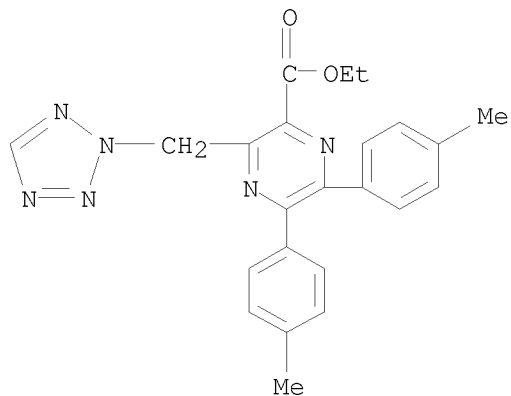
RN 811441-61-9 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-methylphenyl)-3-(1H-tetrazol-1-ylmethyl)-, ethyl ester (9CI) (CA INDEX NAME)



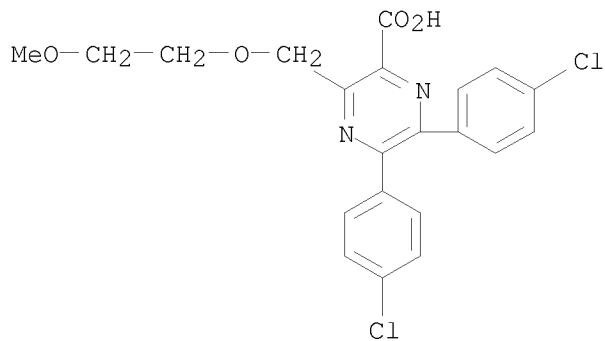
RN 811441-63-1 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-methylphenyl)-3-(2H-tetrazol-2-ylmethyl)-, ethyl ester (9CI) (CA INDEX NAME)



RN 811441-69-7 CAPLUS

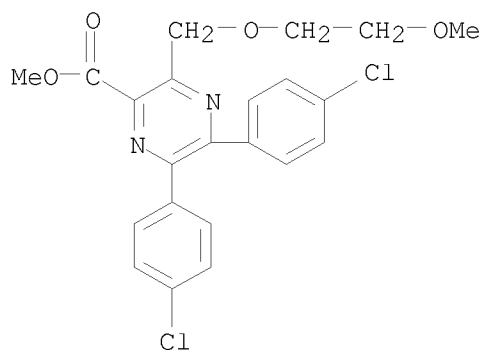
CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(2-methoxyethoxy)methyl]- (9CI) (CA INDEX NAME)



RN 811441-70-0 CAPLUS

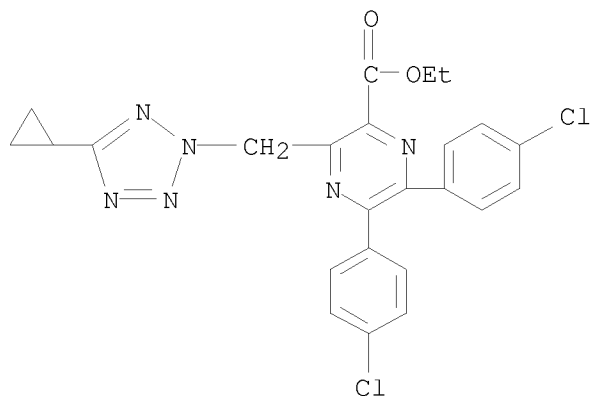
CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(2-

methoxyethoxy)methyl]-, methyl ester (9CI) (CA INDEX NAME)



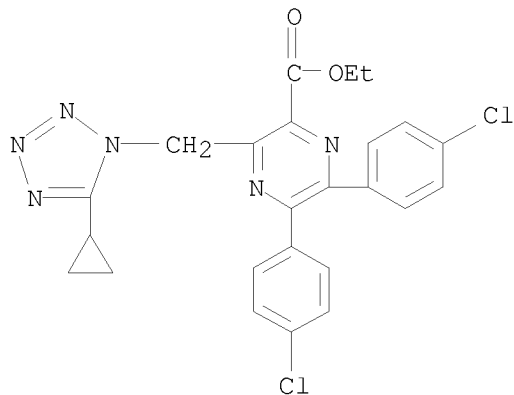
RN 811441-72-2 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(5-cyclopropyl-2H-tetrazol-2-yl)methyl]-, ethyl ester (9CI) (CA INDEX NAME)



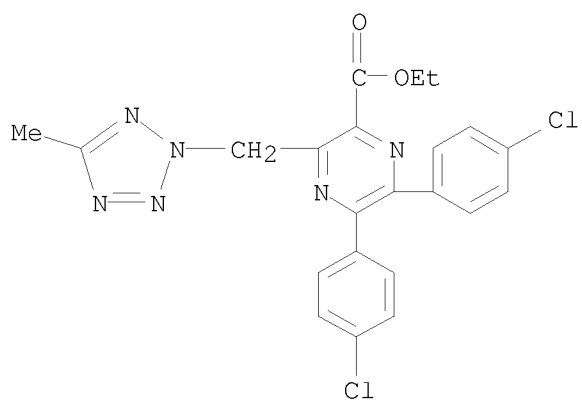
RN 811441-73-3 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(5-cyclopropyl-1H-tetrazol-1-yl)methyl]-, ethyl ester (9CI) (CA INDEX NAME)



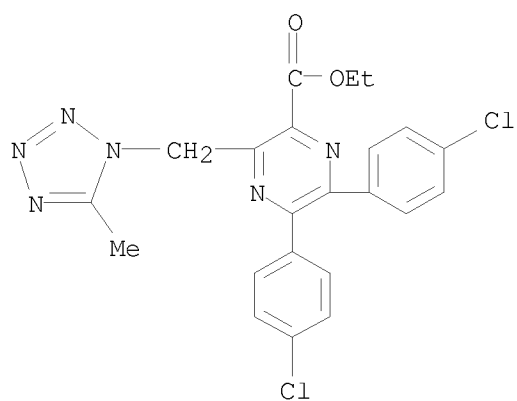
RN 811441-76-6 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(5-methyl-2H-tetrazol-2-yl)methyl]-, ethyl ester (9CI) (CA INDEX NAME)



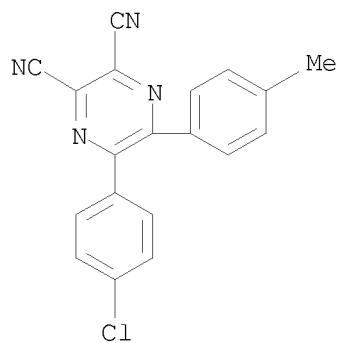
RN 811441-77-7 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(5-methyl-1H-tetrazol-1-yl)methyl]-, ethyl ester (9CI) (CA INDEX NAME)



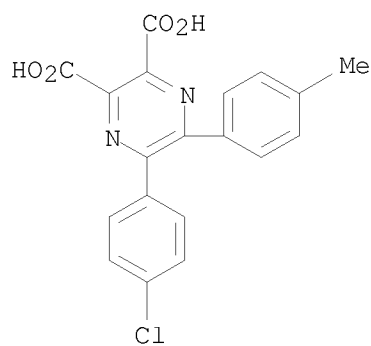
RN 811441-80-2 CAPLUS

CN 2,3-Pyrazinedicarboxonitrile, 5-(4-chlorophenyl)-6-(4-methylphenyl)- (CA INDEX NAME)

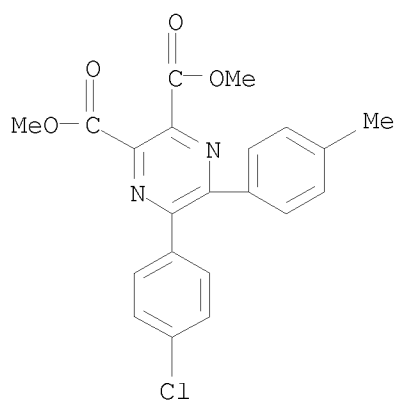


RN 811441-81-3 CAPLUS

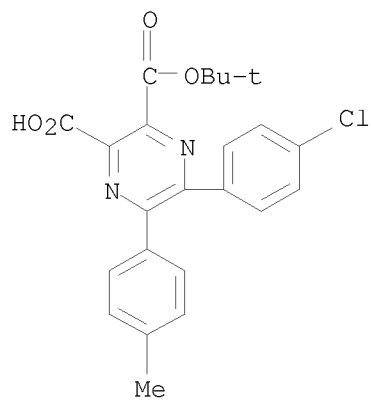
CN 2,3-Pyrazinedicarboxylic acid, 5-(4-chlorophenyl)-6-(4-methylphenyl)- (CA INDEX NAME)



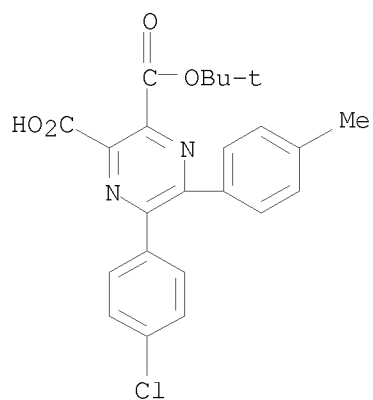
RN 811441-82-4 CAPLUS
 CN 2,3-Pyrazinedicarboxylic acid, 5-(4-chlorophenyl)-6-(4-methylphenyl)-,
 dimethyl ester (9CI) (CA INDEX NAME)



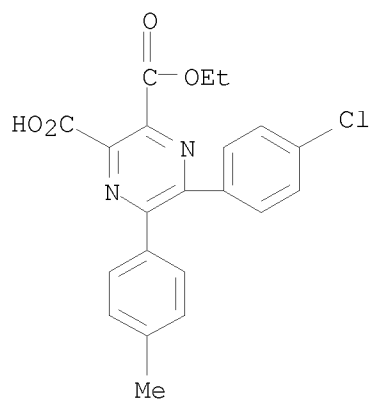
RN 811441-84-6 CAPLUS
 CN 2,3-Pyrazinedicarboxylic acid, 5-(4-chlorophenyl)-6-(4-methylphenyl)-,
 3-(1,1-dimethylethyl) ester (CA INDEX NAME)



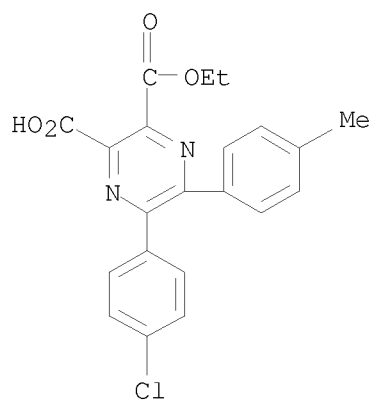
RN 811441-85-7 CAPLUS
 CN 2,3-Pyrazinedicarboxylic acid, 5-(4-chlorophenyl)-6-(4-methylphenyl)-,
 2-(1,1-dimethylethyl) ester (CA INDEX NAME)



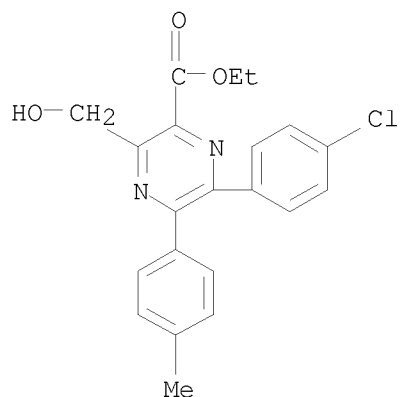
RN 811441-88-0 CAPLUS
 CN 2,3-Pyrazinedicarboxylic acid, 5-(4-chlorophenyl)-6-(4-methylphenyl)-,
 3-ethyl ester (CA INDEX NAME)



RN 811441-89-1 CAPLUS
 CN 2,3-Pyrazinedicarboxylic acid, 5-(4-chlorophenyl)-6-(4-methylphenyl)-,
 2-ethyl ester (CA INDEX NAME)

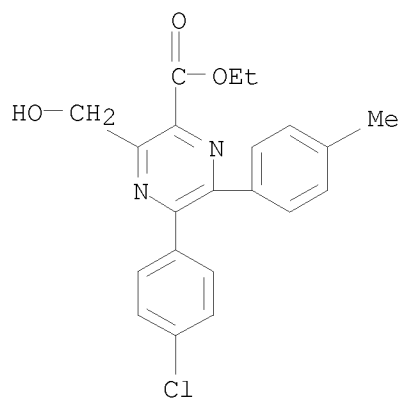


RN 811441-90-4 CAPLUS
 CN Pyrazinecarboxylic acid, 6-(4-chlorophenyl)-3-(hydroxymethyl)-5-(4-
 methylphenyl)-, ethyl ester (9CI) (CA INDEX NAME)



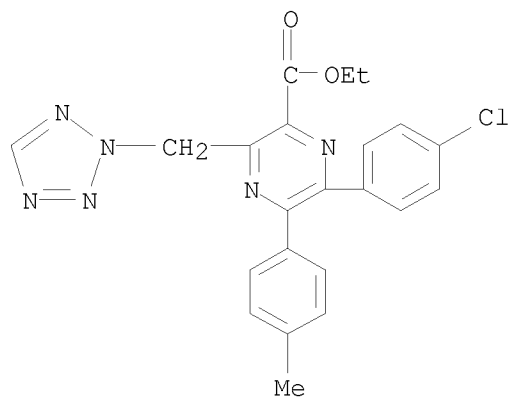
RN 811441-91-5 CAPLUS

CN Pyrazinecarboxylic acid, 5-(4-chlorophenyl)-3-(hydroxymethyl)-6-(4-methylphenyl)-, ethyl ester (9CI) (CA INDEX NAME)



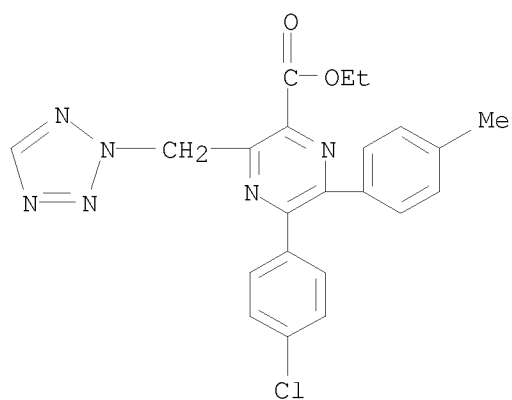
RN 811441-92-6 CAPLUS

CN Pyrazinecarboxylic acid, 6-(4-chlorophenyl)-5-(4-methylphenyl)-3-(2H-tetrazol-2-ylmethyl)-, ethyl ester (9CI) (CA INDEX NAME)



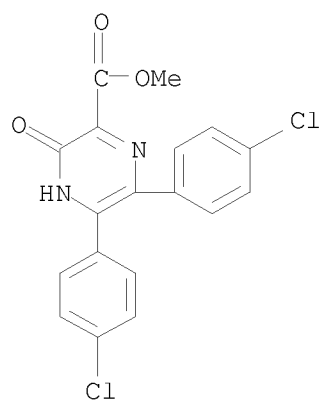
RN 811441-95-9 CAPLUS

CN Pyrazinecarboxylic acid, 5-(4-chlorophenyl)-6-(4-methylphenyl)-3-(2H-tetrazol-2-ylmethyl)-, ethyl ester (9CI) (CA INDEX NAME)



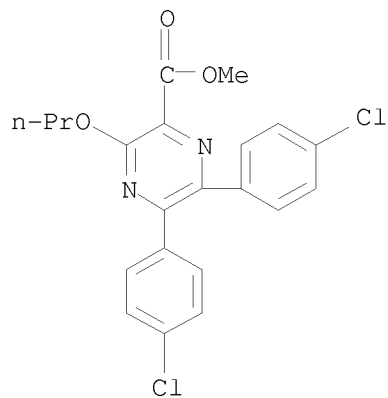
RN 811441-99-3 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3,4-dihydro-3-oxo-, methyl ester (9CI) (CA INDEX NAME)



RN 811442-01-0 CAPLUS

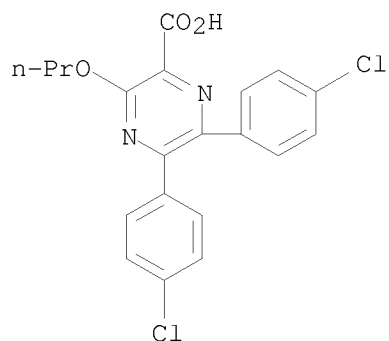
CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-propoxy-, methyl ester (9CI) (CA INDEX NAME)



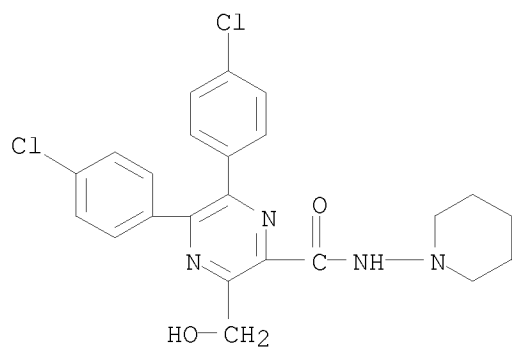
RN 811442-02-1 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-propoxy- (9CI) (CA

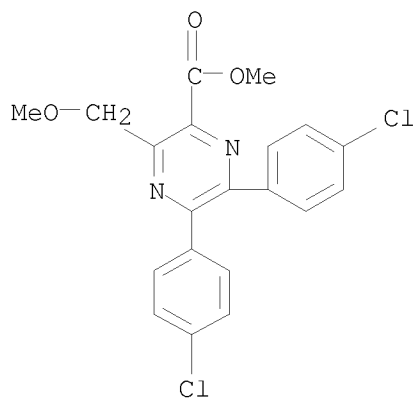
INDEX NAME)



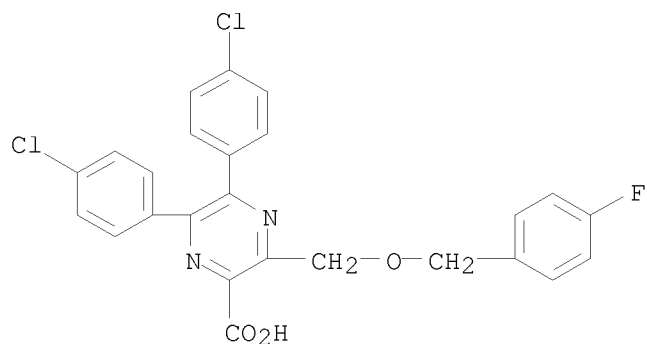
RN 811442-09-8 CAPLUS
 CN Pyrazinecarboxamide, 5,6-bis(4-chlorophenyl)-3-(hydroxymethyl)-N-1-piperidinyl- (9CI) (CA INDEX NAME)



RN 811442-15-6 CAPLUS
 CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-(methoxymethyl)-, methyl ester (9CI) (CA INDEX NAME)

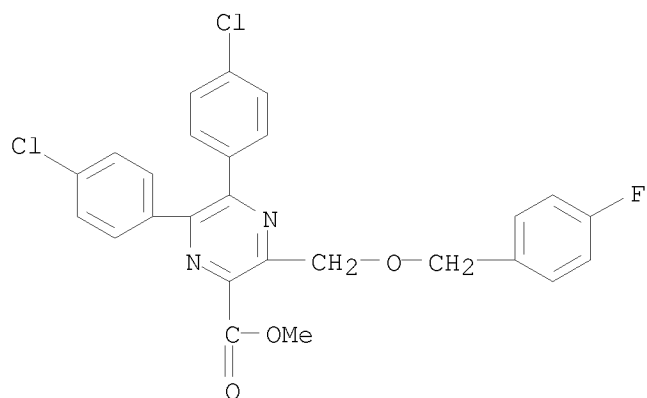


RN 811442-17-8 CAPLUS
 CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[4-(4-fluorophenyl)methoxy]methyl]- (9CI) (CA INDEX NAME)



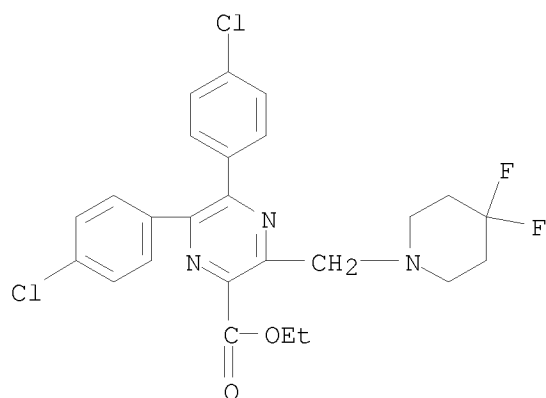
RN 811442-18-9 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[[4-fluorophenyl)methoxy]methyl]-, methyl ester (9CI) (CA INDEX NAME)



RN 811442-20-3 CAPLUS

CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(4,4-difluoro-1-piperidinyl)methyl]-, ethyl ester (9CI) (CA INDEX NAME)

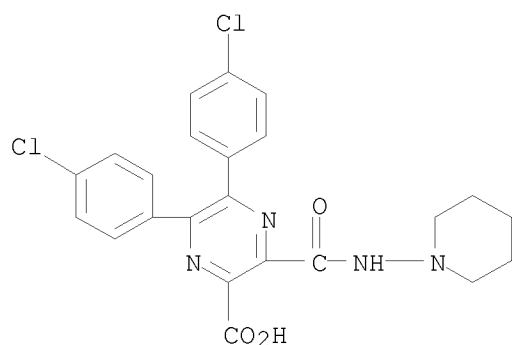


IT 811441-51-7, 5,6-Bis(4-chlorophenyl)-3-[(piperidin-1-yl)amino]carbonylpyrazine-2-carboxylic acid 811442-00-9, 5,6-Bis(4-chlorophenyl)-3-hydroxypyrazine-2-carboxylic acid

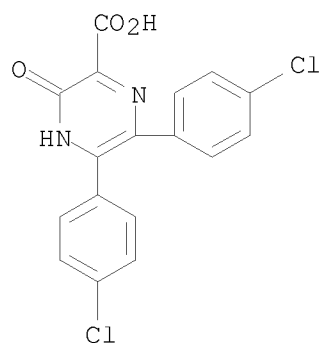
RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of 3-substituted 5,6-diarylpyrazine-2-carboxamide and 2-sulfonamide derivs. as CB1 modulators)

RN 811441-51-7 CAPLUS
 CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3-[(1-piperidinylamino)carbonyl]- (9CI) (CA INDEX NAME)



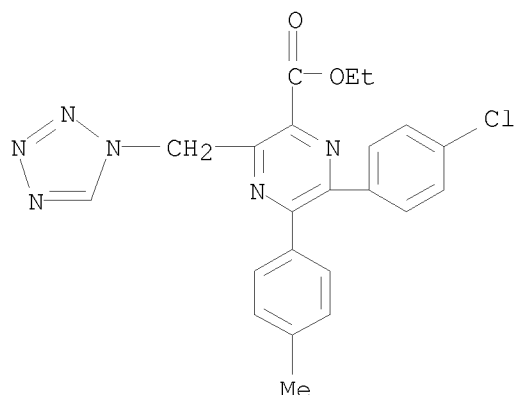
RN 811442-00-9 CAPLUS
 CN Pyrazinecarboxylic acid, 5,6-bis(4-chlorophenyl)-3,4-dihydro-3-oxo- (9CI) (CA INDEX NAME)



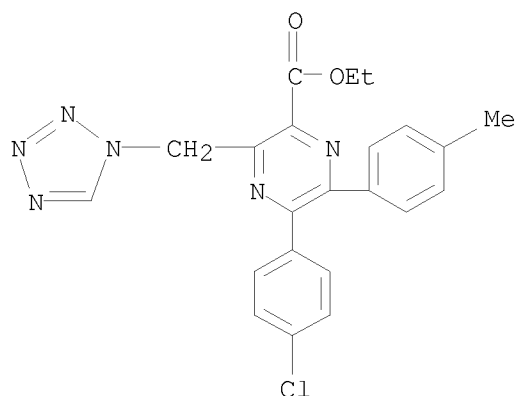
IT 811441-93-7P, Ethyl 6-(4-chlorophenyl)-5-(4-methylphenyl)-3-[(1H-tetrazol-1-yl)methyl]pyrazine-2-carboxylate 811441-96-0P, Ethyl 5-(4-chlorophenyl)-6-(4-methylphenyl)-3-[(1H-tetrazol-1-yl)methyl]pyrazine-2-carboxylate

RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of 3-substituted 5,6-diarylpyrazine-2-carboxamide and 2-sulfonamide derivs. as CB1 modulators)

RN 811441-93-7 CAPLUS
 CN Pyrazinecarboxylic acid, 6-(4-chlorophenyl)-5-(4-methylphenyl)-3-(1H-tetrazol-1-ylmethyl)-, ethyl ester (9CI) (CA INDEX NAME)



RN 811441-96-0 CAPLUS
 CN Pyrazinecarboxylic acid, 5-(4-chlorophenyl)-6-(4-methylphenyl)-3-(1H-tetrazol-1-ylmethyl)-, ethyl ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 33 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2004:1053937 CAPLUS
 DOCUMENT NUMBER: 142:412910
 TITLE: Halochromism of pyridinium azomethine ylides stabilized by dicyanopyrazine group
 AUTHOR(S): Jung, Young-Sik; Jaung, Jae-Yun
 CORPORATE SOURCE: Medicinal Science Division, Korea Research Institute of Chemical Technology, Taejon, Yusong, 305-606, S. Korea
 SOURCE: Dyes and Pigments (2005), 65(3), 205-209
 CODEN: DYPIDX; ISSN: 0143-7208
 PUBLISHER: Elsevier Ltd.
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 142:412910
 AB Reactions of 2-(bromomethyl)-3-phenyl-5,6-dicyanopyrazine with 4-methylpyridine gave dicyanopyrazylmethylene pyridinium bromides. These salts were changed to their corresponding methylides by the addition of a base, and then were restored by the addition of an acid. The pyridinium methylides exhibited intense visible absorption. This study has attempted to apply the pyridinium halides with a dicyanopyrazine group to a

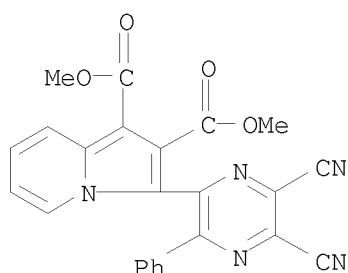
reversibly colored material to gain an external response. The 1,3-dipolar cycloaddn. reaction of such pyridinium azomethine ylides containing a stabilized dicyanopyrazine group with di-Me acetylenedicarboxylate afforded fluorescent indolizine dyes.

IT 685090-17-9P 685090-18-0P

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(fluorescent dye; in preparation and halochromism of pyridinium azomethine ylides stabilized by dicyanopyrazine group)

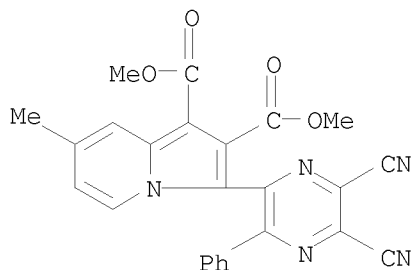
RN 685090-17-9 CAPLUS

CN 1,2-Indolizinedicarboxylic acid, 3-(5,6-dicyano-3-phenylpyrazinyl)-, dimethyl ester (9CI) (CA INDEX NAME)



RN 685090-18-0 CAPLUS

CN 1,2-Indolizinedicarboxylic acid, 3-(5,6-dicyano-3-phenylpyrazinyl)-7-methyl-, dimethyl ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 34 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:1033699 CAPLUS

DOCUMENT NUMBER: 142:176813

TITLE: Tetra-2,3-pyrazinoporphyrazines with Externally Appended Pyridine Rings. 1. Tetrakis-2,3-[5,6-di(2-pyridyl)pyrazino]porphyrazine: A New Macrocyclic with Remarkable Electron-Deficient Properties

AUTHOR(S): Donzello, Maria Pia; Ou, Zhongping; Monacelli, Fabrizio; Ricciardi, Giampaolo; Rizzoli, Corrado; Ercolani, Claudio; Kadish, Karl M.

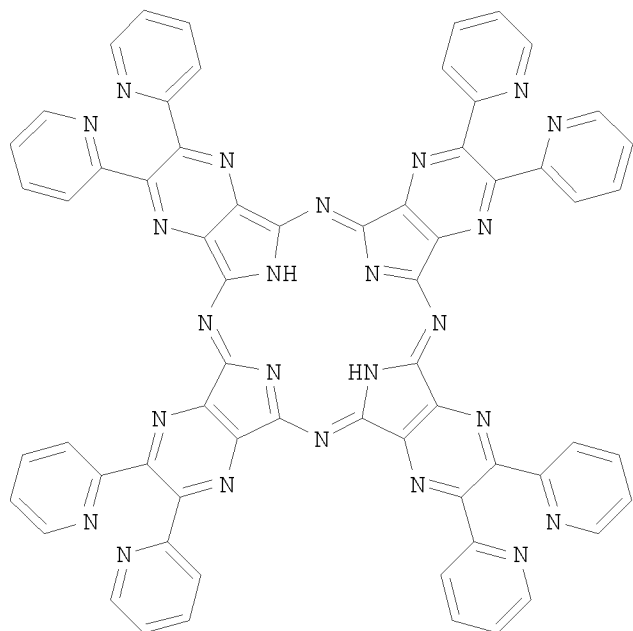
CORPORATE SOURCE: Dipartimento di Chimica, Universita degli Studi di Roma La Sapienza, Rome, I-00185, Italy

SOURCE: Inorganic Chemistry (2004), 43(26), 8626-8636
CODEN: INOCAJ; ISSN: 0020-1669

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English
OTHER SOURCE(S): CASREACT 142:176813
GI



I

AB Pyrazinoporphyrazine macrocycle I is prepared in two steps from 1,2-di(2-pyridyl)ethanedione and 2,3-diaminomaleonitrile; the UV/visible spectra and their dependence on solvent, the equilibrium between neutral and doubly deprotonated I, the electrochem., and the magnetic susceptibility of I are determined. Cyclocondensation of 1,2-di(2-pyridyl)ethanedione and 2,3-diaminomaleonitrile in THF yields the intermediate 5,6-bis(2-pyridyl)-2,3-pyrazinedicarbonitrile; direct cyclotetramerization of the pyrazinedicarbonitrile in the presence of DBU yields I. UV-vis spectra of I in two nondonor solvents (CHCl₃, CH₂Cl₂), a slightly basic solvent (pyridine), and an acidic solvent (CH₃COOH) are obtained; mol. aggregation and colloidal dispersions occur which dissociate over time to give clear solns. of monomeric I in either its neutral form or (in pyridine) its doubly-deprotonated form. Titration of I in CH₂Cl₂ with tetrabutylammonium hydroxide shows the loss of two protons from the macrocyclic core and quant. conversion of I to its doubly-deprotonated anion. I and its doubly-deprotonated anion exhibit identical electrochem. behavior, consistent with a conversion of the dianion to the neutral porphyrazine prior to electroredn. via four reversible one-electron transfer steps; electrochem. oxidation of I is not observed. I is diamagnetic

at

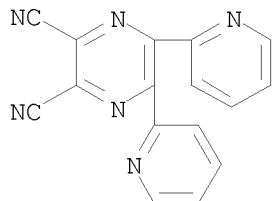
room temperature. The structure of 5,6-bis(2-pyridyl)-2,3-pyrazinedicarbonitrile is determined by X-ray crystallog.

IT 118553-90-5P

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(crystal structure; preparation of a pyrazinoporphyrazine macrocycle by cyclocondensation of bis(2-pyridyl)ethanedione and diaminomaleonitrile followed by cyclotetramerization of the pyrazinedicarbonitrile intermediate)

RN 118553-90-5 CAPLUS
CN 2,3-Pyrazinedicarbonitrile, 5,6-di-2-pyridinyl- (CA INDEX NAME)



REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 35 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:1033698 CAPLUS

DOCUMENT NUMBER: 142:189534

TITLE: Tetra-2,3-pyrazinoporphyrazines with Externally Appended Pyridine Rings. 2. Metal Complexes of Tetrakis-2,3-[5,6-di(2-pyridyl)pyrazino]porphyrazine: Linear and Nonlinear Optical Properties and Electrochemical Behavior

AUTHOR(S): Donzello, Maria Pia; Ou, Zoungping; Dini, Danilo; Meneghetti, Moreno; Ercolani, Claudio; Kadish, Karl M.
CORPORATE SOURCE: Dipartimento di Chimica, Universita degli Studi di Roma La Sapienza, Rome, I-00185, Italy

SOURCE: Inorganic Chemistry (2004), 43(26), 8637-8648
CODEN: INOCAJ; ISSN: 0020-1669

PUBLISHER: American Chemical Society

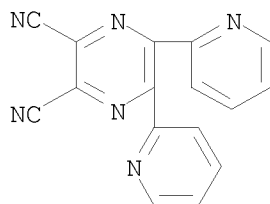
DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 142:189534

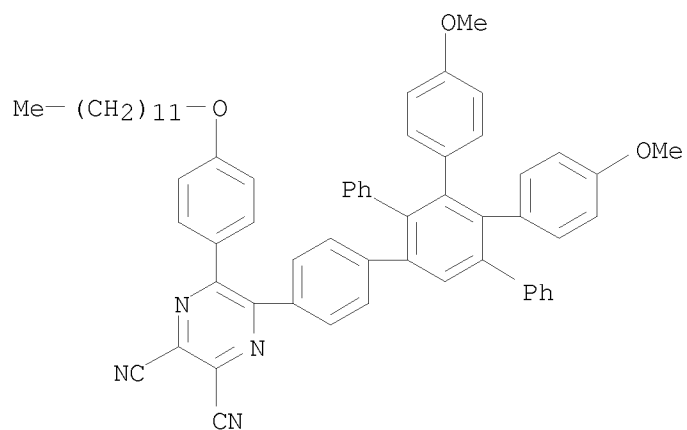
AB Metal complexes of tetrakis-2,3-[5,6-di(2-pyridyl)pyrazino]porphyrazine, [Py8TPyzPzH₂], [Py8TPyzPzM]·xH₂O (M = MgII(H₂O), MnII, CoII, CuII, ZnII; x = 3-8) were synthesized by reaction of the free-base macrocycle with the appropriate metal acetate in pyridine or DMSO under mild conditions. Clathrated H₂O and retained pyridine mols. for the MnII and CoII species are easily eliminated by heating under vacuum, the H₂O mols. being recovered by exposure of the unsolvated macrocycles to air. Magnetic susceptibility measurements and EPR spectra of the materials in the solid state provide basic information on the spin state of the CuII, CoII, and MnII species. Colloidal solns. caused by mol. aggregation are formed in nondonor solvents (CH₂Cl₂, CHCl₃), a moderately basic solvent (pyridine), and an acidic solvent (CH₃COOH), with the extent of aggregation depending on the specific solvent and the central metal ion. UV-visible spectral monitoring of the solns. after preparation indicates that disaggregation systematically occurs as a function of time leading ultimately to the formation of clear solns. containing the monomeric form of the porphyrazine. Cyclic voltammetry and thin-layer spectroelectrochem. show that each compound with an electroinactive metal ion undergoes four reversible 1-electron redns., giving the neg. charged species [Py8TPyzPzM]ⁿ⁻ (n = 1-4). The stepwise uptake of four electrons is consistent with a ring-centered reduction, but in the case of the Co complex a metal-centered (CoII → CoI) reduction occurs in the 1st process and only three addnl. redns. are observed. No oxidns. are observed in pyridine or CH₂Cl₂ containing 0.1M tetrabutylammonium perchlorate (TBAP). The nonlinear optical properties (NLO) of [Py8TPyzPzM] (M = 2HI, CuII, ZnII, MgII(H₂O)) also were examined with nanosecond pulses at 532 nm in DMSO solution. Reverse saturable absorption is shown by all of the [Py8TPyzPzM] species, which exhibit distinct behavior depending on the nature of M and extent of

aggregation.
 IT 118553-90-5
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (for preparation of magnesium and transition metal
 tetrakis[(pyridyl)pyrazino]porphyrazine complex hydrates)
 RN 118553-90-5 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-di-2-pyridinyl- (CA INDEX NAME)



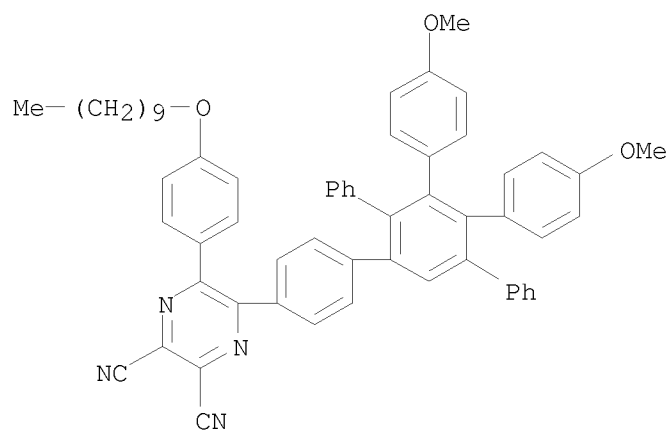
REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 36 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2004:1012905 CAPLUS
 DOCUMENT NUMBER: 142:448267
 TITLE: Synthesis and spectral properties of phenylene
 dendrimers based on porphyrazines
 AUTHOR(S): Jaung, Jae-yun
 CORPORATE SOURCE: Department of Polymer & Textile Engineering, Hanyang
 University, Seoul, 133-791, S. Korea
 SOURCE: Bulletin of the Korean Chemical Society (2004),
 25(10), 1453-1454
 CODEN: BKCSDE; ISSN: 0253-2964
 PUBLISHER: Korean Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 142:448267
 AB The synthesis of aromatic 2,3-dicyanopyrazine pyrazine derivs. and their
 conversion to tetrapyrazinoporphyrazinato copper complexes having four
 triphenylene branches with increased solubility in organic solvents is
 reported.
 The mol. aggregation and UV-visible spectra of the complexes in relation
 to solvent polarity were examined These phthalocyanine dye analogs have
 potential as nonlinear optical materials.
 IT 851085-25-1P 851085-26-2P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (intermediate; preparation and spectral properties of triphenylene-branched
 tetrapyrazinoporphyrazinato copper complexes)
 RN 851085-25-1 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5-[3',4'-bis(4-methoxyphenyl)-5'-
 phenyl[1,1':2',1''-terphenyl]-4-yl]-6-[4-(dodecyloxy)phenyl]- (9CI) (CA
 INDEX NAME)



RN 851085-26-2 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[3',4'-bis(4-methoxyphenyl)-5'-phenyl[1,1':2',1''-terphenyl]-4-yl]-6-[4-(decyloxy)phenyl]- (9CI) (CA INDEX NAME)



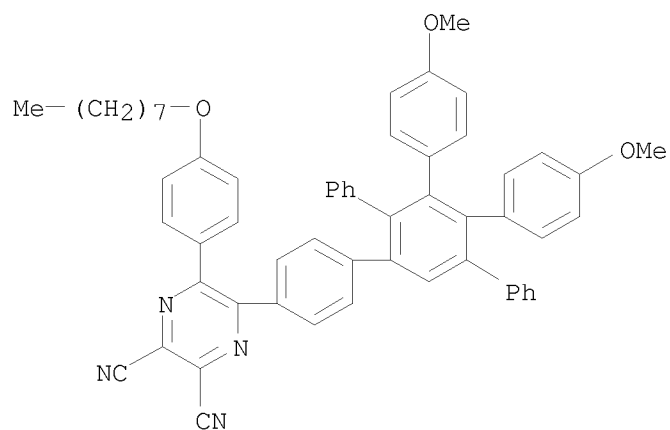
IT 874913-81-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and spectral properties of triphenylene-branched tetrapyrazinoporphyrazinato copper complexes)

RN 874913-81-2 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[3',4'-bis(4-methoxyphenyl)-5'-phenyl[1,1':2',1''-terphenyl]-4-yl]-6-[4-(octyloxy)phenyl]- (9CI) (CA INDEX NAME)



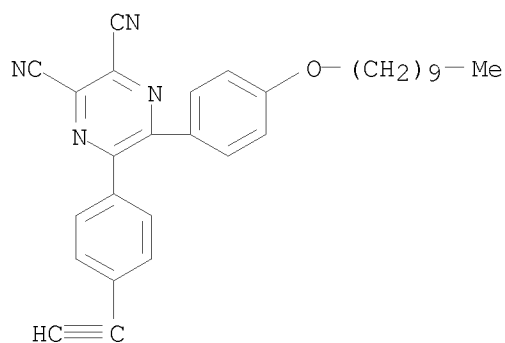
IT 484678-60-6 851085-27-3

RL: RCT (Reactant); RACT (Reactant or reagent)

(starting material; preparation and spectral properties of
triphenylene-branched tetrapyrazinoporphyrazinato copper complexes)

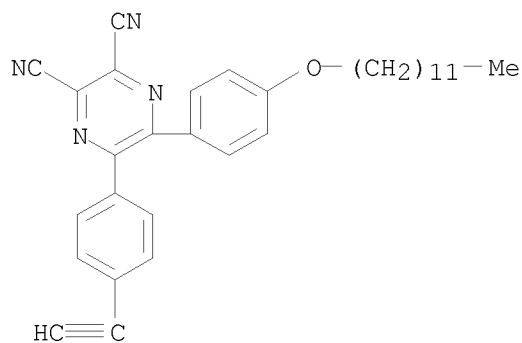
RN 484678-60-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[4-(decyloxy)phenyl]-6-(4-ethynylphenyl)-
(CA INDEX NAME)



RN 851085-27-3 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[4-(dodecyloxy)phenyl]-6-(4-ethynylphenyl)-
(CA INDEX NAME)



REFERENCE COUNT:

15

THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 37 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:927551 CAPLUS

DOCUMENT NUMBER: 142:412917

TITLE: Synthesis and optical properties of push-pull type tetrapyrazinoporphyrazines

AUTHOR(S): Lee, Bum Hoon; Jaung, Jae Yun; Jang, Se Chan; Yi, Sung Chul

CORPORATE SOURCE: R&D Center, Texan Medtech Co. Ltd., Kyunggi-do, 429-450, S. Korea

SOURCE: Dyes and Pigments (2004), Volume Date 2005, 65(2), 159-167

CODEN: DYPIDX; ISSN: 0143-7208

PUBLISHER: Elsevier Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 142:412917

AB The optical properties of push-pull type tetrapyrazinoporphyrazine copper complexes based on 2,3-dicyanopyrazines were demonstrated. They have an alkoxyphenyl substituent as an electron donor group at the 5-position, and nitrophenyl or octylsulfonylphenyl substituents as an electron acceptor group at the 6-position of the 2,3-dicyanopyrazines. The absorption and fluorescence maxima of nitro-substituted compds. were observed at 427-444 and 453-494 nm, resp. In the case of the sulfonyl-substituted compds., the hypsochromic shift of absorption and fluorescence maxima were 59-104 and 13-79 nm, resp.

IT 850408-98-9P 850408-99-0P 850409-00-6P

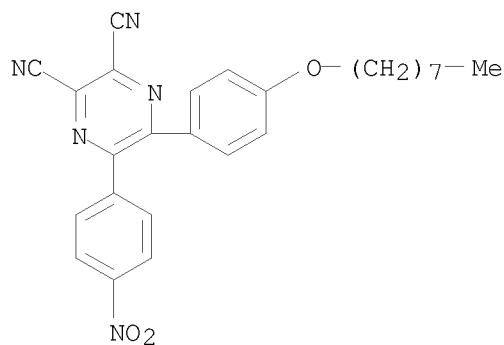
850409-01-7P 850409-02-8P 850409-03-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(intermediate; preparation and optical properties of push-pull type tetrapyrazinoporphyrazine dyes)

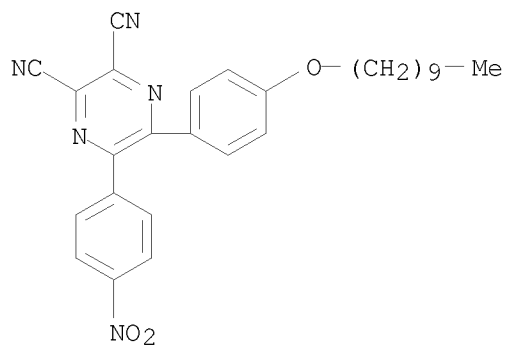
RN 850408-98-9 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-(4-nitrophenyl)-6-[4-(octyloxy)phenyl]- (CA INDEX NAME)

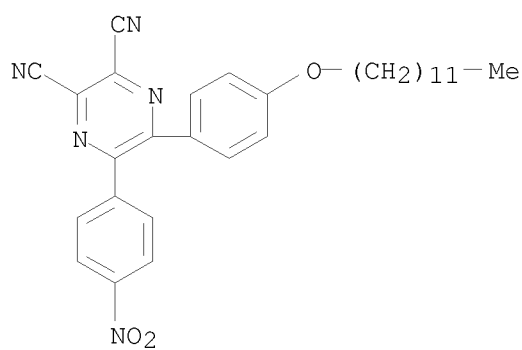


RN 850408-99-0 CAPLUS

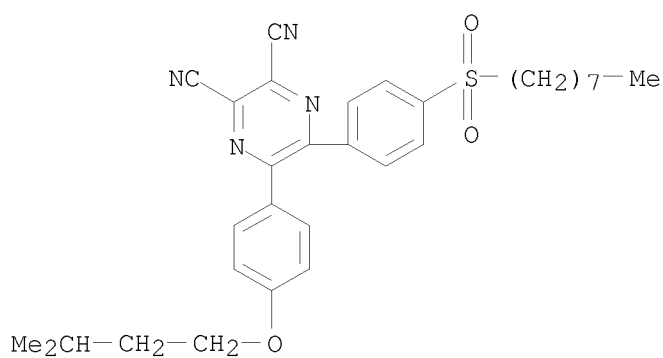
CN 2,3-Pyrazinedicarbonitrile, 5-[4-(decyloxy)phenyl]-6-(4-nitrophenyl)- (CA INDEX NAME)



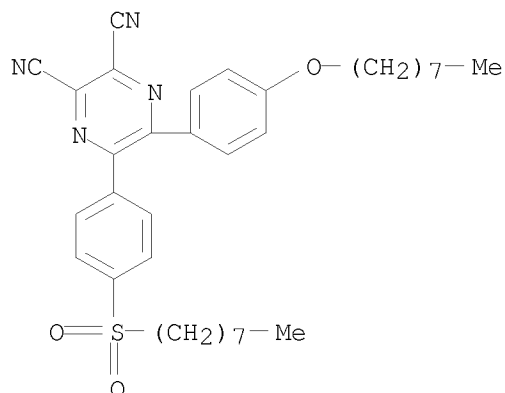
RN 850409-00-6 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5-[4-(dodecyloxy)phenyl]-6-(4-nitrophenyl)-
 (CA INDEX NAME)



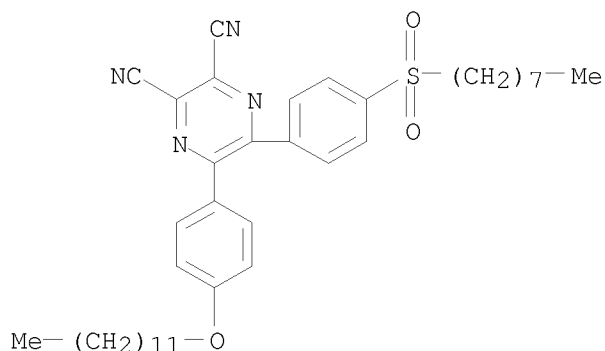
RN 850409-01-7 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5-[4-(3-methylbutoxy)phenyl]-6-[4-(octylsulfonyl)phenyl]-
 (CA INDEX NAME)



RN 850409-02-8 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5-[4-(octyloxy)phenyl]-6-[4-(octylsulfonyl)phenyl]-
 (CA INDEX NAME)



RN 850409-03-9 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5-[4-(dodecyloxy)phenyl]-6-[4-(octylsulfonyl)phenyl]- (CA INDEX NAME)



REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 38 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:741141 CAPLUS

DOCUMENT NUMBER: 142:74386

TITLE: Synthesis and spectral characteristics of unsymmetrical porphyrazines with triphenylmethyl groups

AUTHOR(S): Galanin, N. E.; Kudrik, E. V.; Shaposhnikov, G. P.; Aleksandriiskii, V. V.

CORPORATE SOURCE: Ivanovo State University of Chemistry and Technology, Ivanovo, 153460, Russia

SOURCE: Russian Journal of Organic Chemistry (Translation of Zhurnal Organicheskoi Khimii) (2004), 40(5), 723-728
 CODEN: RJOCEQ; ISSN: 1070-4280

PUBLISHER: MAIK Nauka/Interperiodica Publishing

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 142:74386

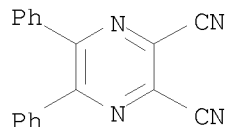
AB Condensation of 4-[4-(triphenylmethyl)phenoxy]-1,2-dicyanobenzene with bis(methylthio)maleonitrile or 2,3-dicyano-5,6-diphenylpyrazine afforded sym. and unsym. porphyrazines. The effect of their structural modification on the spectral characteristics was investigated.

IT 52197-23-6, 2,3-Dicyano-5,6-diphenylpyrazine
 RL: RCT (Reactant); RACT (Reactant or reagent)

(synthesis via cyclocondensation and spectral characteristics of unsym.
porphyrazine with triphenylmethyl groups)

RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)



REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 39 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:433750 CAPLUS

DOCUMENT NUMBER: 141:7131

TITLE: Preparation of quinazolines and analogs as Akt
inhibitors and indoles as protein kinase inhibitors
for use in synergistic combination therapy for the
treatment of cancer

INVENTOR(S): Barnett, Stanley F.; Defeo-Jones, Deborah D.; Hartman,
George D.; Huber, Hans E.; Stirdivant, Steven M.;
Heimbrook, David C.

PATENT ASSIGNEE(S): USA

SOURCE: U.S. Pat. Appl. Publ., 121 pp., which
CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004102360	A1	20040527	US 2003-678565	20031003
PRIORITY APPLN. INFO.:			US 2002-422312P	P 20021030
			US 2003-460911P	P 20030407

OTHER SOURCE(S): MARPAT 141:7131

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The present invention relates to methods of treating cancer using a
combination of at least two Akt inhibitors I [wherein Q = (un)substituted
heterocyclyl, aryl; U, V, W, and X = independently CH, N; Y, Z =
independently CH, N, provided that at least one of Y and Z = N; n = 0-3; p
= 0-2; q = 0-4; R1, R2, R7 = independently halo, CN, OH, CHO, NO2, or
(un)substituted (cyclo)alkyl(oxy), alkenyl(oxy), alkynyl(oxy),
heterocyclyl(oxy), acyl, carboxy, carbamoyl(oxy), ureido, sulfamoyl, etc.;
R3, R4 = independently H, (perfluoro)alkyl; or CR3R4 = cycloalkyl,
heterocyclyl; and pharmaceutically acceptable salts or stereoisomers
thereof] or a combination of I and a protein kinase inhibitor II [wherein
G = H2, O; X = C, N, SO0-2, O; m = 0-2; n = 0-2; p = 0-6; q = 0-4; R1 =
independently H, halo, or (un)substituted (cyclo)alkyl, heterocyclyl,
aryl, carbamoyl, amino, acyl, sulfamoyl, carboxy, etc.; R2 = H or
(un)substituted (cyclo)alkyl(oxy), amino, aryloxy, heterocyclyloxy,
alkenyloxy, alkynyloxy, etc.; R5 = independently H, halo, NO2, CN, or

(un)substituted alkyl, alkenyl, alkynyl, carboxy, acyl, sulfamoyl, carbamoyl, ureido, amino, etc.; and pharmaceutically acceptable salts or stereoisomers thereof], optionally in combination with a third compound Examples include syntheses for I and II and assays demonstrating Akt inhibitor activity, antitumor activity, and the synergistic effect of combinations of AKT inhibitors and/or protein kinase inhibitors on caspase 3 activity. For instance, III•HCl was prepared in an 8-step reaction sequence culminating with the cycloaddn. of 4-(2-aminoprop-2-yl)benzil and o-phenylenediamine using glacial acetic acid in H₂O, followed by work up with chloroform and ethanolic HCl. III•HCl, a selective Akt1 and Akt2 inhibitor, demonstrated a 3.2-fold in caspase 3 activation over control compared to a 1.2-fold increase for a protein kinase inhibitor. Combination treatment produced a 9-fold increase in caspase 3 activation.

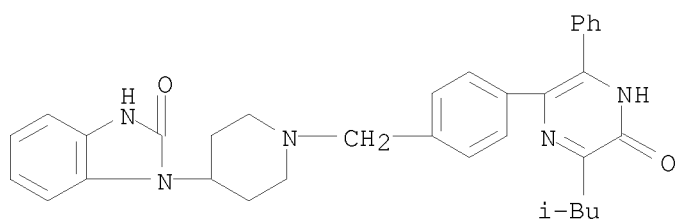
IT 612847-15-1P 612847-16-2P 612847-17-3P
612847-18-4P 612847-19-5P 612847-20-8P
612848-78-9P 616873-13-3P 616873-19-9P
616873-21-3P 616873-27-9P 616873-29-1P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(antitumor agent; preparation of quinazolines and analogs as Akt inhibitors and indoles as protein kinase inhibitors for use in synergistic combination therapy for treatment of cancer)

RN 612847-15-1 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(2-methylpropyl)-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyll]-1,3-dihydro- (9CI) (CA INDEX NAME)



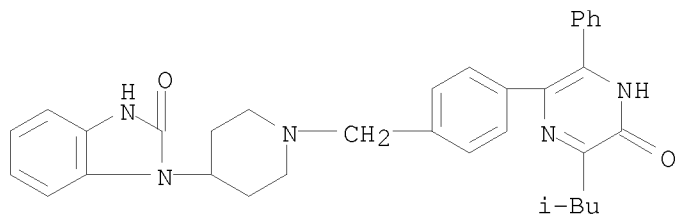
RN 612847-16-2 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(2-methylpropyl)-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyll]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

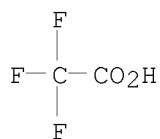
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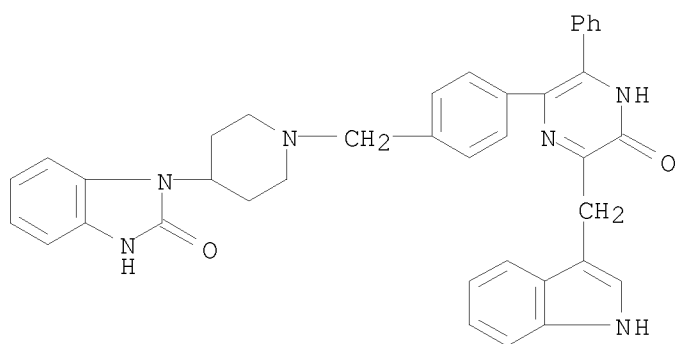


CM 2

CRN 76-05-1
CMF C2 H F3 O2



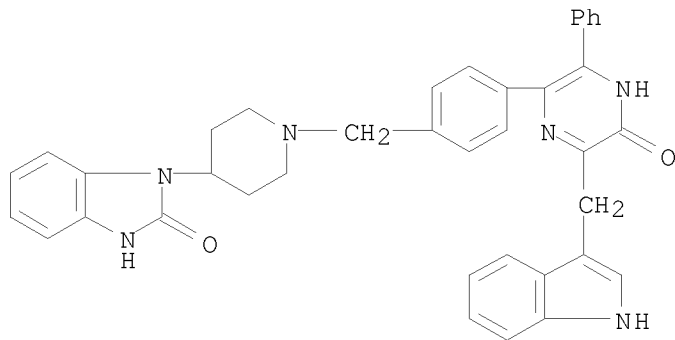
RN 612847-17-3 CAPLUS
CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(1H-indol-3-ylmethyl)-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidiny]-1,3-dihydro- (9CI) (CA INDEX NAME)



RN 612847-18-4 CAPLUS
CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(1H-indol-3-ylmethyl)-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidiny]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

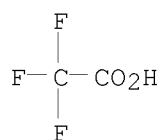
CM 1

CRN 612847-17-3
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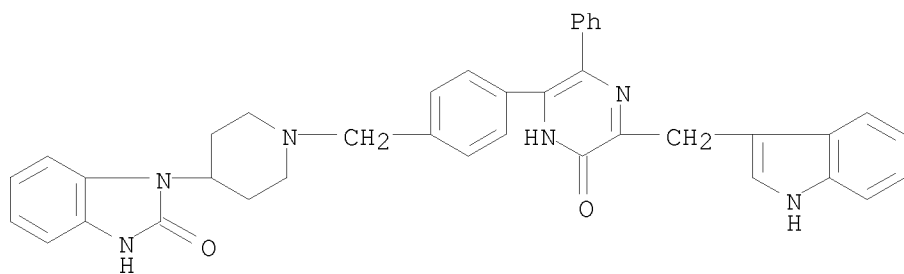
CM 2

CRN 76-05-1
CMF C2 H F3 O2



RN 612847-19-5 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(1H-indol-3-ylmethyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyll]-1,3-dihydro- (9CI) (CA INDEX NAME)



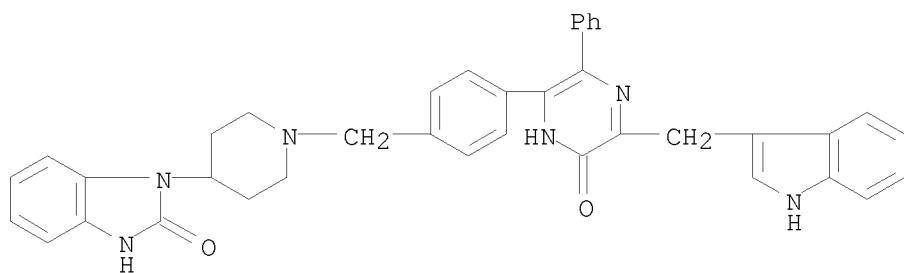
RN 612847-20-8 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(1H-indol-3-ylmethyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyll]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

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CRN 612847-19-5

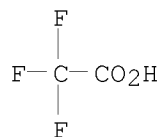
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CM 2

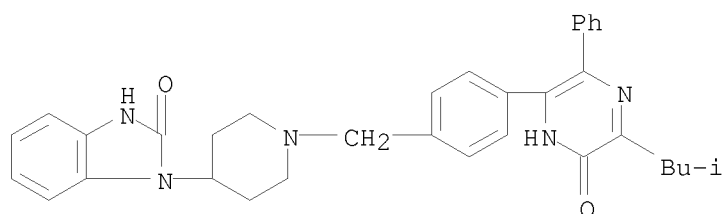
CRN 76-05-1

CMF C2 H F3 O2



RN 612848-78-9 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(2-methylpropyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



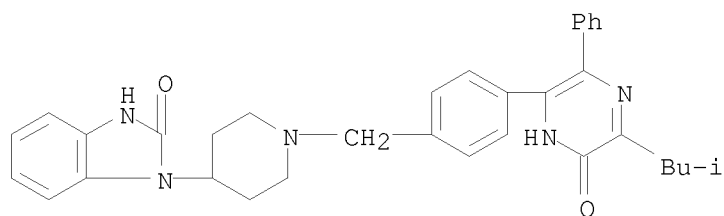
RN 616873-13-3 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(2-methylpropyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

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CRN 612848-78-9

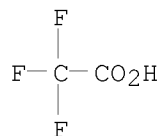
CMF C33 H35 N5 O2



CM 2

CRN 76-05-1

CMF C2 H F3 O2



RN 616873-19-9 CAPLUS

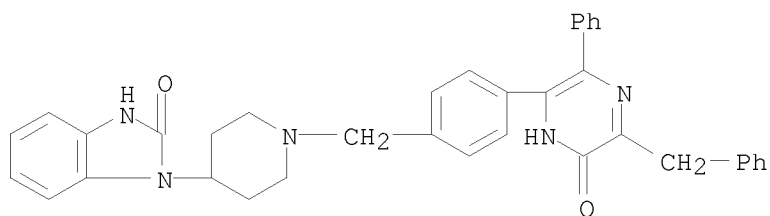
CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-6-oxo-3-phenyl-5-(phenylmethyl)pyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro-,

trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

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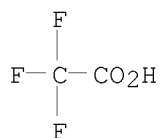
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CM 2

CRN 76-05-1

CMF C2 H F3 O2



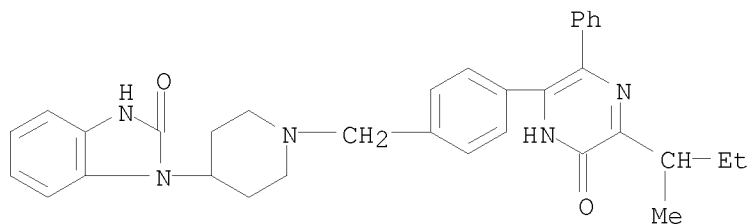
RN 616873-21-3 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(1-methylpropyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidyl]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

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CRN 616873-20-2

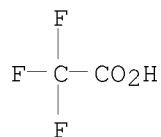
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CRN 76-05-1

CMF C2 H F3 O2



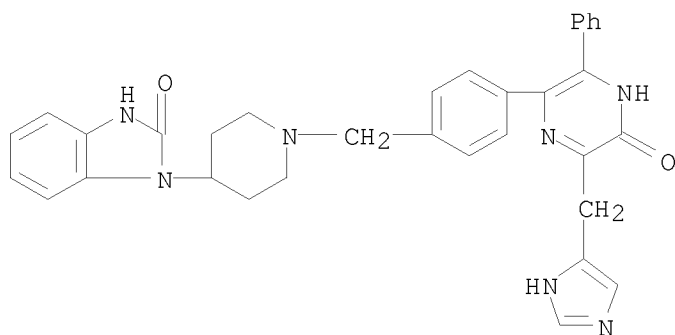
RN 616873-27-9 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(1H-imidazol-4-ylmethyl)-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyll]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

CRN 616873-26-8

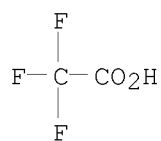
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CM 2

CRN 76-05-1

CMF C2 H F3 O2



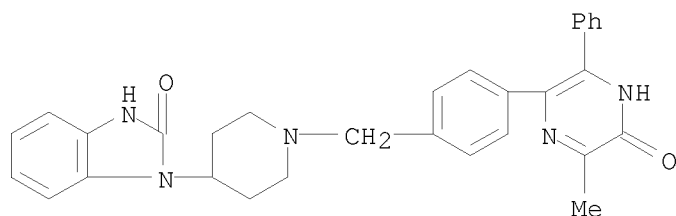
RN 616873-29-1 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-(4,5-dihydro-6-methyl-5-oxo-3-phenylpyrazinyl)phenyl]methyl]-4-piperidinyll]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

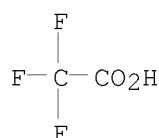
CRN 616873-28-0

CMF C30 H29 N5 O2



CM 2

CRN 76-05-1
CMF C2 H F3 O2



L4 ANSWER 40 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:240481 CAPLUS

DOCUMENT NUMBER: 141:16227

TITLE: Helical zinc complexes of pyrazine-pyridine hybrids

AUTHOR(S): Dias, S. I. G.; Heirtzler, Fenton; Bark, T.; Labat, Gael; Neels, Antonia

CORPORATE SOURCE: Chemical Laboratory, School of Physical Sciences, University of Kent, Kent, CT2 7NH, UK

SOURCE: Polyhedron (2004), 23(6), 1011-1017

CODEN: PLYHDE; ISSN: 0277-5387

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 141:16227

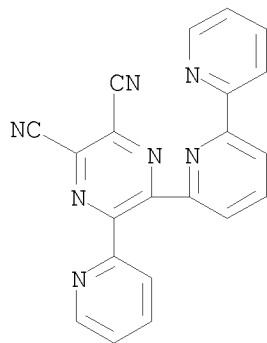
AB The Zn(II) complexes 1aZnCl₂ and 1bZnCl₂ (1a = 2-(6',2''-bipyrid-2'-yl)-3-(2-pyridyl)pyrazine; 1b 2-(6',2'-bipyrid-2'-yl)-5,6-dicyano-3-(2-pyridyl)pyrazine) were prepared by treatment of the ligands with ZnCl₂. The structures of both were studied by x-ray crystallog. and ¹H NMR spectroscopy. Both complexes display proton deshielding phenomena that are attributed to a twisted solution-state mol. conformation. In the solid state, 1aZnCl₂ exhibits a high degree of torsion about the axis through the uncomplexed pyridine ring and the pendant Cl atoms. The solid-state structure and solution-state self-associative behavior of 1bZnCl₂ are indicative of a partial self-assembly motif.

IT 696605-76-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and complexation with zinc)

RN 696605-76-2 CAPLUS

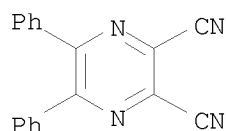
CN 2,3-Pyrazinedicarbonitrile, 5-[2,2'-bipyridin]-6-yl-6-(2-pyridinyl)- (CA INDEX NAME)



REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 41 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2004:205980 CAPLUS
 DOCUMENT NUMBER: 142:197903
 TITLE: Product class 22: other diazinodiazines
 AUTHOR(S): Ishikawa, T.
 CORPORATE SOURCE: Germany
 SOURCE: Science of Synthesis (2004), 16, 1337-1397
 CODEN: SSCYJ9
 PUBLISHER: Georg Thieme Verlag
 DOCUMENT TYPE: Journal; General Review
 LANGUAGE: English

AB A review. Preparation of diazinodiazines is given with the exception of pteridines.
 IT 52197-23-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of diazinodiazines)
 RN 52197-23-6 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)



REFERENCE COUNT: 208 THERE ARE 208 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 42 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2004:205967 CAPLUS
 DOCUMENT NUMBER: 142:113926
 TITLE: Product class 14: pyrazines
 AUTHOR(S): Sato, N.
 CORPORATE SOURCE: Germany
 SOURCE: Science of Synthesis (2004), 16, 751-844
 CODEN: SSCYJ9
 PUBLISHER: Georg Thieme Verlag
 DOCUMENT TYPE: Journal; General Review
 LANGUAGE: English

AB A review. Methods for preparing pyrazines are reviewed including cyclization, ring transformation, aromatization and substituent

modification.

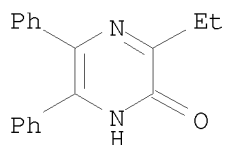
IT 104369-39-3

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of pyrazines via cyclization, ring transformation,
aromatization and substituent modification)

RN 104369-39-3 CAPLUS

CN 2(1H)-Pyrazinone, 3-ethyl-5,6-diphenyl- (CA INDEX NAME)



IT 52197-23-6P 75018-08-5P 101579-12-8P

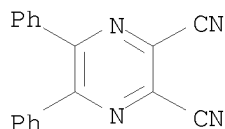
104369-40-6P

RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of pyrazines via cyclization, ring transformation,
aromatization and substituent modification)

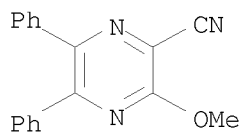
RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)



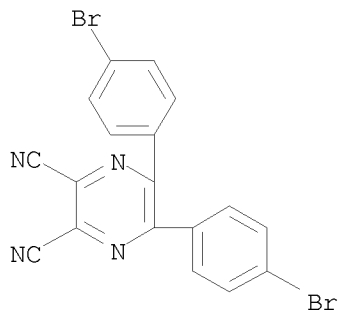
RN 75018-08-5 CAPLUS

CN Pyrazinecarbonitrile, 3-methoxy-5,6-diphenyl- (9CI) (CA INDEX NAME)



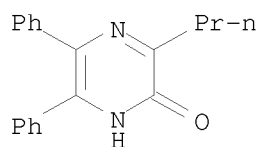
RN 101579-12-8 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-bromophenyl)- (CA INDEX NAME)



RN 104369-40-6 CAPLUS

CN 2(1H)-Pyrazinone, 5,6-diphenyl-3-propyl- (CA INDEX NAME)



REFERENCE COUNT: 506 THERE ARE 506 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE REFORMAT

L4 ANSWER 43 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:202763 CAPLUS

DOCUMENT NUMBER: 142:272664

TITLE: Product class 9: phthalocyanines and related compounds

AUTHOR(S): McKeown, N. B.

CORPORATE SOURCE: Dept. of Chemistry, University of Manchester, Manchester, M13 9PL, UK

SOURCE: Science of Synthesis (2004), 17, 1237-1368

CODEN: SSCYJ9

PUBLISHER: Georg Thieme Verlag

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A review. Preparation is considered for unsubstituted phthalocyanine, metal phthalocyanine complexes and their substituted sym. and unsym. derivs.

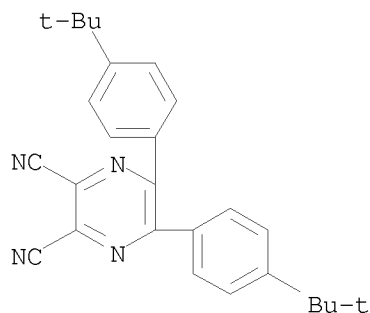
IT 144828-31-9 159254-45-2

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of phthalocyanines and their metal complexes)

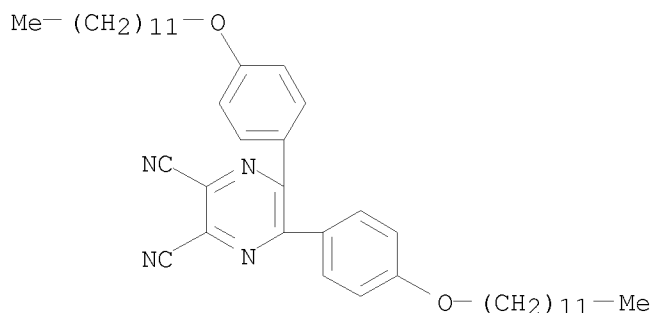
RN 144828-31-9 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(1,1-dimethylethyl)phenyl]- (CA INDEX NAME)



RN 159254-45-2 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(dodecyloxy)phenyl]- (CA INDEX NAME)



REFERENCE COUNT: 682 THERE ARE 682 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE REFORMAT

L4 ANSWER 44 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:94098 CAPLUS

DOCUMENT NUMBER: 141:190756

TITLE: Synthesis and reactivity of difluoroaromatic compounds containing heterocyclic central groups

AUTHOR(S): Keshtov, M. L.; Keshtova, C. V.; Begretov, M. M.; Tkhakakhov, R. B.

CORPORATE SOURCE: Berbekov Kabardino-Balkar State University, Nal'chik, Russia

SOURCE: Russian Journal of General Chemistry (Translation of Zhurnal Obshchei Khimii) (2003), 73(9), 1476-1480
CODEN: RJGCEK; ISSN: 1070-3632

PUBLISHER: MAIK Nauka/Interperiodica Publishing

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 141:190756

AB The reaction of trichloroacetaldehyde with fluorobenzene, followed by a series of transformations, gave 4-fluorobenzil and 4,4'-difluorobenzil which were used in the synthesis of new difluoroarom. compds. with a heterocyclic central group. The ¹H, ¹³C, and ¹⁹F NMR spectra of the newly synthesized difluoroarom. compds. were studied. The charge densities on the carbon atoms attached to fluorine were calculated in terms of the PM3 and AM1 semiempirical approxns. A correlation was found between the charge on C(F) and the corresponding ¹³C and ¹⁹F chemical shifts. Using this correlation, the reactivity of difluoroarom. compds. in nucleophilic substitution reactions was estimated

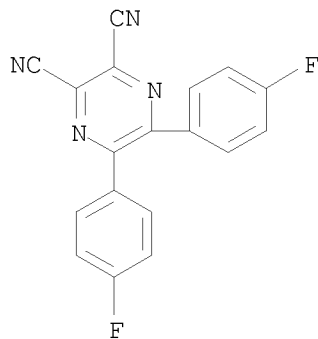
IT 738607-69-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(synthesis and reactivity of difluoroarom. compds. containing heterocyclic central groups)

RN 738607-69-7 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-fluorophenyl)- (CA INDEX NAME)



REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 45 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:63554 CAPLUS

DOCUMENT NUMBER: 140:327777

TITLE: Kinetics and mechanism of water substitution in the low-spin Fe(II) complex of 4-octasulfophenylpyrazinoporphyrazine

AUTHOR(S): Kudrik, Evgeny V.; van Eldik, Rudi; Makarov, Sergei V.

CORPORATE SOURCE: Institute for Inorganic Chemistry, University of Erlangen-Nuernberg, Erlangen, 91058, Germany

SOURCE: Dalton Transactions (2004), (3), 429-435

CODEN: DTARAF; ISSN: 1477-9226

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The substitution reaction of the axial-coordinated water by pyridine, pyrazine and 4-CN-pyridine in the low-spin Fe(II) complex of octasulfophenyltetrapyrazinoporphyrazine was studied. Kinetic and thermodyn. parameters for the different reaction steps of the process were determined. On the basis of NMR data and spectrophotometric titrns., a pronounced non-equivalence of the two coordinated N-donor ligands was observed. The substitution of water by pyridine and 4-CN-pyridine is shown to include the formation of a precursor outer-sphere complex, whereas substitution by pyrazine follows a limiting dissociative mechanism.

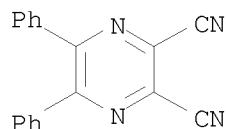
IT 52197-23-6, 2,3-Dicyano-5,6-diphenylpyrazine

RL: RCT (Reactant); RACT (Reactant or reagent)

(kinetics and mechanism of water substitution in low-spin Fe(II) complex of 4-octasulfophenylpyrazinoporphyrazine)

RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)



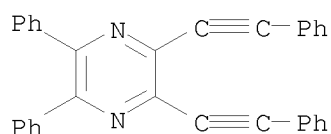
REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 46 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:1000504 CAPLUS

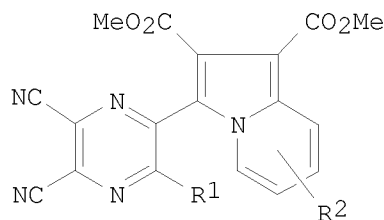
DOCUMENT NUMBER: 141:242819

TITLE: Product class 4: organometallic complexes of copper
 AUTHOR(S): Heaney, H.; Christie, S.
 CORPORATE SOURCE: Dept. of Chemistry, University of Loughborough,
 Loughborough, LE11 3TU, UK
 SOURCE: Science of Synthesis (2004), 3, 305-662
 CODEN: SSCYJ9
 PUBLISHER: Georg Thieme Verlag
 DOCUMENT TYPE: Journal; General Review
 LANGUAGE: English
 AB A review. The use of copper and related complexes in applications to organic
 synthesis is reviewed.
 IT 75163-70-1P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (applications of copper and organocopper complexes to organic synthesis)
 RN 75163-70-1 CAPLUS
 CN Pyrazine, 2,3-diphenyl-5,6-bis(2-phenylethynyl)- (CA INDEX NAME)



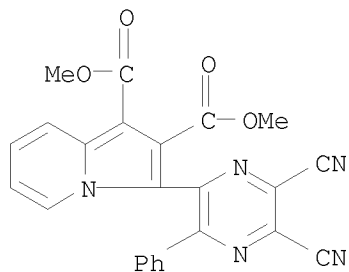
REFERENCE COUNT: 1706 THERE ARE 1706 CITED REFERENCES AVAILABLE FOR
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE
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L4 ANSWER 47 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2003:973234 CAPLUS
 DOCUMENT NUMBER: 140:375038
 TITLE: 1,3-Dipolar cycloaddition reactions of pyridinium
 azomethine ylides containing 5,6-dicyanopyrazines
 AUTHOR(S): Jaung, Jae-yun; Jung, Young-sik
 CORPORATE SOURCE: Department of Polymer & Textile Engineering, Hanyang
 University, Seoul, 133-791, S. Korea
 SOURCE: Bulletin of the Korean Chemical Society (2003),
 24(11), 1565-1566
 CODEN: BKCSDE; ISSN: 0253-2964
 PUBLISHER: Korean Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 140:375038
 GI

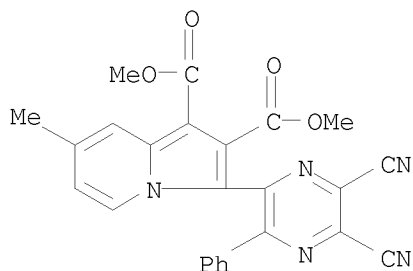


AB Indolizines containing 5,6-dicyanopyrazine, such as I [R1 = Me, Ph; R2 = H,
 2-Me, 4-Me], are prepared in moderate yields via 1,3-dipolar cycloaddn.
 reactions of pyridinium azomethine ylides with DMAD and Me acrylate as
 dipolarophiles.

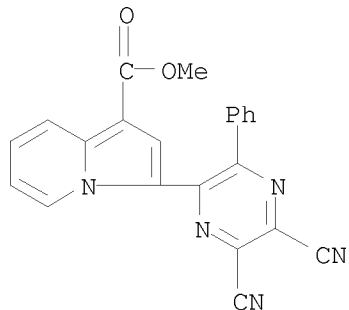
IT 685090-17-9P 685090-18-0P 685090-22-6P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of indolizines containing 5,6-dicyanopyrazine via 1,3-dipolar
 cycloaddn. of pyridinium azomethine ylides with dipolarophiles)
 RN 685090-17-9 CAPLUS
 CN 1,2-Indolizinedicarboxylic acid, 3-(5,6-dicyano-3-phenylpyrazinyl)-,
 dimethyl ester (9CI) (CA INDEX NAME)



RN 685090-18-0 CAPLUS
 CN 1,2-Indolizinedicarboxylic acid, 3-(5,6-dicyano-3-phenylpyrazinyl)-7-
 methyl-, dimethyl ester (9CI) (CA INDEX NAME)



RN 685090-22-6 CAPLUS
 CN 1-Indolizinecarboxylic acid, 3-(5,6-dicyano-3-phenylpyrazinyl)-, methyl
 ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 48 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2003:911996 CAPLUS
 DOCUMENT NUMBER: 140:331239

TITLE: Dimensionality changes in crystalline complexes induced by exposure to air: Solid-state studies using single crystal and powder X-ray diffraction methods

AUTHOR(S): Neels, Antonia; Alfonso, Montserrat; Mantero, Deborah Gonzalez; Stoeckli-evans, Helen

CORPORATE SOURCE: Institut de Chimie, Universite de Neuchatel, Neuchatel, CH-2007, Switz.

SOURCE: Chimia (2003), 57(10), 619-622
CODEN: CHIMAD; ISSN: 0009-4293

PUBLISHER: Swiss Chemical Society

DOCUMENT TYPE: Journal

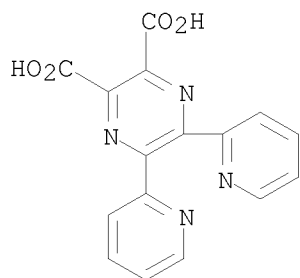
LANGUAGE: English

AB When they come into contact with air, coordination compds. can often change their appearance. For instance, the color of the compound can change as transparent crystals become opaque microcryst. solids. This visible transformation of the compound is frequently accompanied by structural modifications due to loss of solvent mols. or in the reverse case, the reaction with H2O from the air. Often, the dimensionality of the structures also varies and this aspect is demonstrated for three pairs of Cu(II) complexes (1-dimensional → 0-dimensional, 1-dimensional → 2-dimensional and 3-dimensional → 2D). The complementary use of single crystal and powder x-ray diffraction methods is indispensable for the evaluation of these structural changes.

IT 374115-72-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(for preparation of copper methylbis(pyridyl)pyrazine complex)

RN 374115-72-7 CAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-di-2-pyridinyl- (CA INDEX NAME)



REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 49 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:836759 CAPLUS

DOCUMENT NUMBER: 139:350753

TITLE: Preparation of 2,3-diphenylpyrazine derivatives as inhibitors of Akt activity for treating cancer

INVENTOR(S): Duggan, Mark E.; Lindsley, Craig W.; Zhao, Zhijian

PATENT ASSIGNEE(S): Merck & Co., Inc., USA

SOURCE: PCT Int. Appl., 119 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003086279	A2	20031023	WO 2003-US10342	20030404

WO 2003086279 A3 20040108

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS,
LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH,
PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ,
UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,
FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,
BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

CA 2481229 A1 20031023 CA 2003-2481229 20030404

AU 2003226250 A1 20031027 AU 2003-226250 20030404

AU 2003226250 B2 20070816

EP 1494675 A2 20050112 EP 2003-746593 20030404

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

JP 2005529100 T 20050929 JP 2003-583306 20030404

US 2005182256 A1 20050818 US 2004-509959 20041004

US 2007142388 A1 20070621 US 2007-704105 20070208

PRIORITY APPLN. INFO.: US 2002-370842P P 20020408

 WO 2003-US10342 W 20030404

 US 2004-509959 A1 20041004

OTHER SOURCE(S): MARPAT 139:350753

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The title compds. [I; R1 = alkenyl, halo, CN, etc.; R2 = OH, CN, CO₂H, etc.; R3, R4 = H, alkyl, perfluoroalkyl; or R3 and R4 are combined to form (CH₂)_t wherein one of the carbon atoms is optionally replaced by O, S_{Om}, (un)substituted NHCO, N(COH); R5, R6 = H, aryl, heterocyclyl, etc.; or NR₅R₆ = monocyclic or bicyclic heterocycle; n = 0-2; p = 0-2; t = 2-6; m = 0-2] and their salts which inhibit the activity of Akt, a serine/threonine protein kinase, were prepared. Thus alkylating 4-(2-keto-1-benzimidazolyl)piperidine with 4-bromomethylbenzil followed by reacting the resulting intermediate with leucinecarboxamide.HCl afforded the pyrazines II and III. The exemplified compds. I were found to have IC₅₀ of ≤ 20 μM against one or more of Akt1, Akt2 and Akt3. The invention is further directed to chemotherapeutic compns. containing the compds. I and methods for treating cancer comprising administration of the compds. I.

IT 612847-15-1P 612847-16-2P 612847-17-3P
612847-18-4P 612847-19-5P 612847-20-8P
612847-21-9P 612847-22-0P 612847-23-1P
612847-24-2P 612847-25-3P 612847-26-4P
612848-78-9P 616873-13-3P 616873-18-8P
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616873-22-4P 616873-23-5P 616873-24-6P
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616873-31-5P

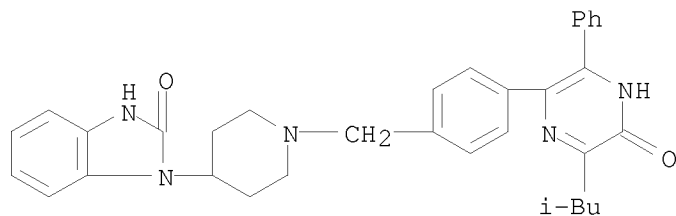
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of 2,3-diphenylpyrazine derivs. as inhibitors of Akt activity for treating cancer)

RN 612847-15-1 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(2-methylpropyl)-5-oxo-3-

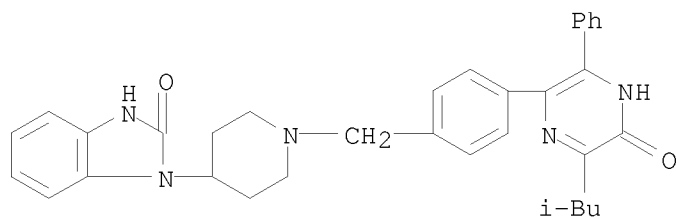
phenylpyrazinyl]phenyl]methyl]-4-piperidinyll]-1,3-dihydro- (9CI) (CA
INDEX NAME)



RN 612847-16-2 CAPLUS
CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(2-methylpropyl)-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyll]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

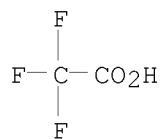
CM 1

CRN 612847-15-1
CMF C33 H35 N5 O2

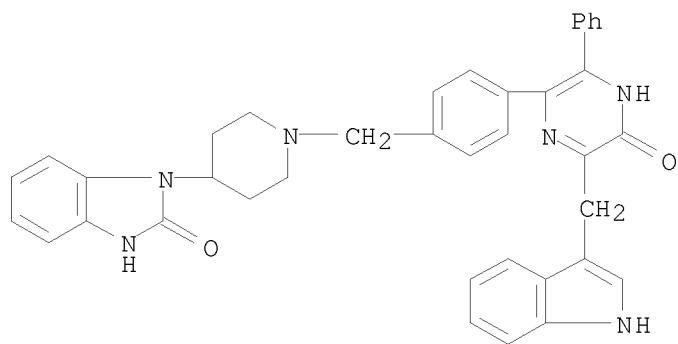


CM 2

CRN 76-05-1
CMF C2 H F3 O2



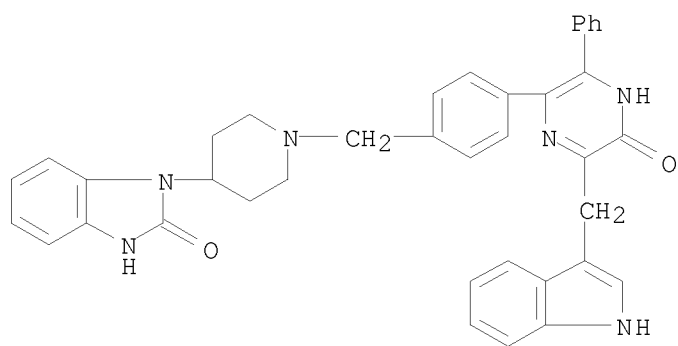
RN 612847-17-3 CAPLUS
CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(1H-indol-3-ylmethyl)-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyll]-1,3-dihydro- (9CI) (CA INDEX NAME)



RN 612847-18-4 CAPLUS
 CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(1H-indol-3-ylmethyl)-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidiny]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

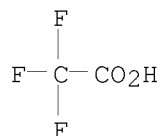
CM 1

CRN 612847-17-3
 CMF C38 H34 N6 O2

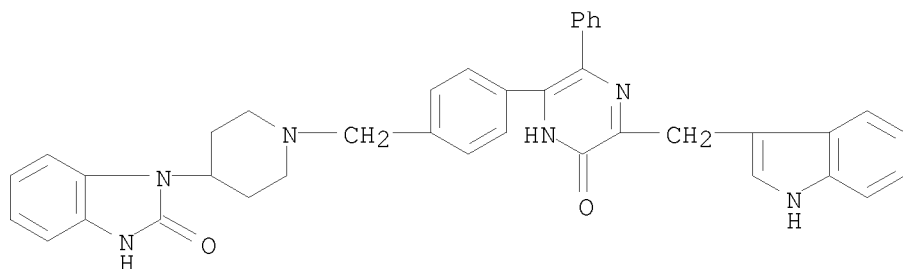


CM 2

CRN 76-05-1
 CMF C2 H F3 O2



RN 612847-19-5 CAPLUS
 CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(1H-indol-3-ylmethyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidiny]-1,3-dihydro- (9CI) (CA INDEX NAME)



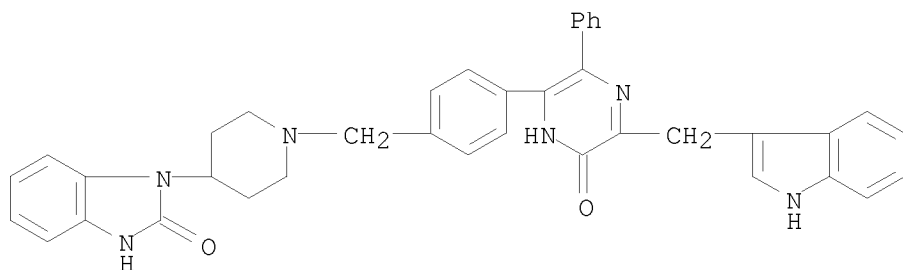
RN 612847-20-8 CAPLUS

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CM 1

CRN 612847-19-5

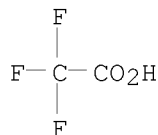
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CM 2

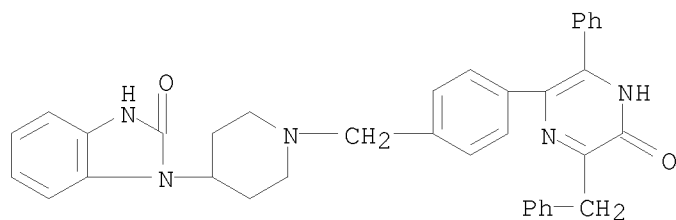
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RN 612847-21-9 CAPLUS

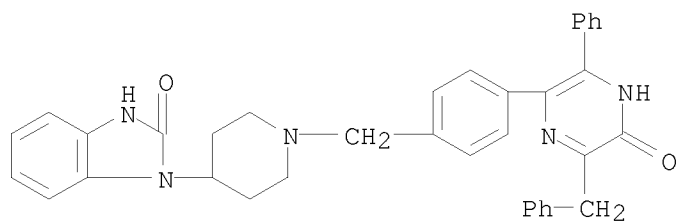
CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-5-oxo-3-phenyl-6-(phenylmethyl)pyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI) (CA INDEX NAME)



RN 612847-22-0 CAPLUS
 CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-5-oxo-3-phenyl-6-(phenylmethyl)pyrazinyl]phenyl]methyl]-4-piperidiny]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

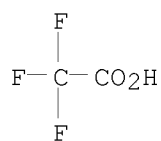
CM 1

CRN 612847-21-9
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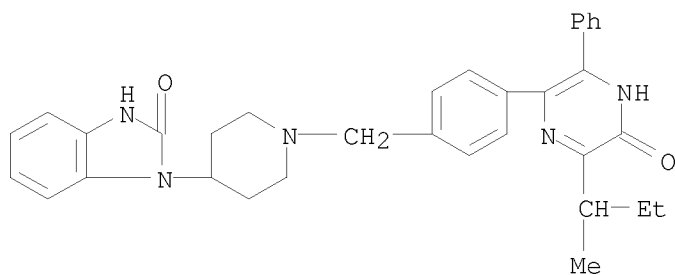


CM 2

CRN 76-05-1
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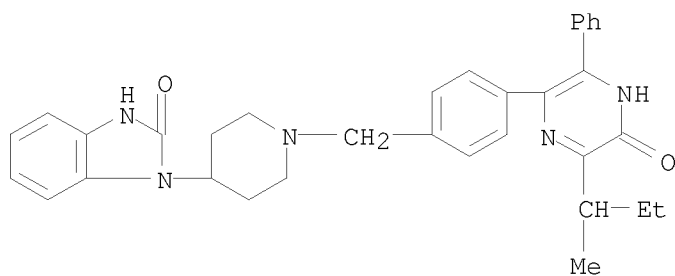
RN 612847-23-1 CAPLUS
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RN 612847-24-2 CAPLUS
 CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(1-methylpropyl)-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidiny]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

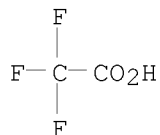
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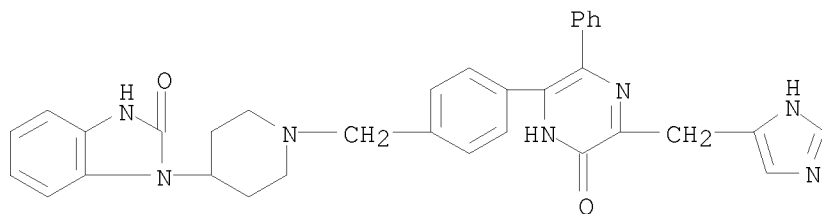


CM 2

CRN 76-05-1
 CMF C2 H F3 O2



RN 612847-25-3 CAPLUS
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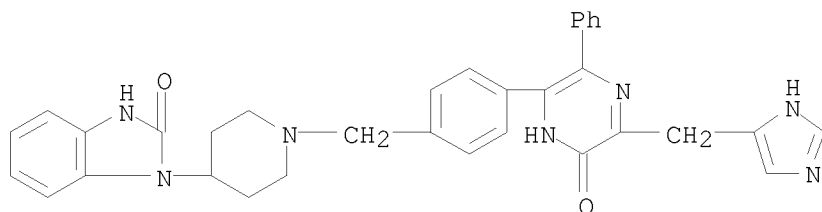
RN 612847-26-4 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(1H-imidazol-4-ylmethyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidiny]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

CRN 612847-25-3

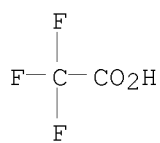
CMF C33 H31 N7 O2



CM 2

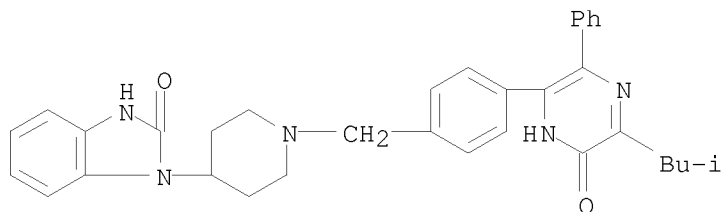
CRN 76-05-1

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RN 612848-78-9 CAPLUS

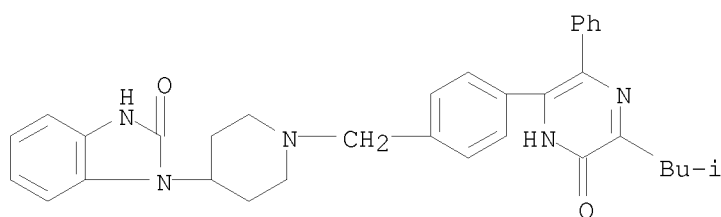
CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(2-methylpropyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidiny]-1,3-dihydro- (9CI) (CA INDEX NAME)



RN 616873-13-3 CAPLUS
 CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(2-methylpropyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidiny]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

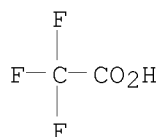
CM 1

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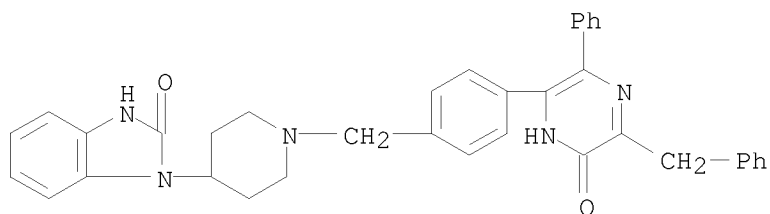


CM 2

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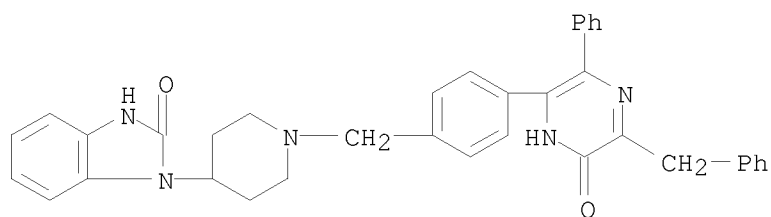
RN 616873-18-8 CAPLUS
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RN 616873-19-9 CAPLUS
 CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-6-oxo-3-phenyl-5-(phenylmethyl)pyrazinyl]phenyl]methyl]-4-piperidiny]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

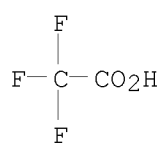
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CM 2

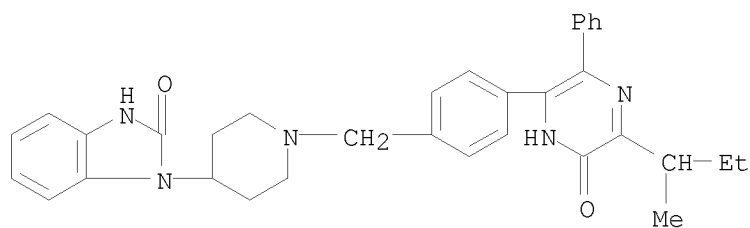
CRN 76-05-1

CMF C2 H F3 O2



RN 616873-20-2 CAPLUS

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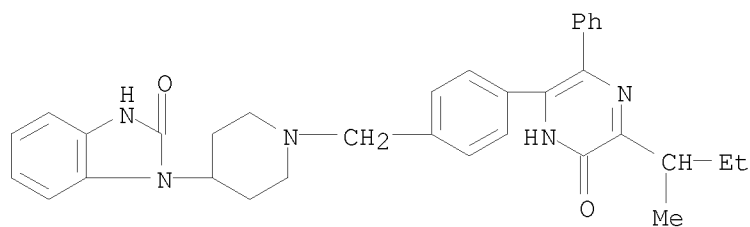
RN 616873-21-3 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(1-methylpropyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

CRN 616873-20-2

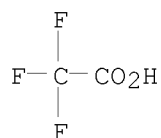
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CM 2

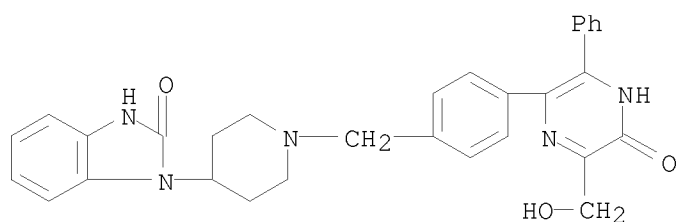
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CMF C2 H F3 O2



RN 616873-22-4 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(hydroxymethyl)-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidiny]-1,3-dihydro- (9CI) (CA INDEX NAME)



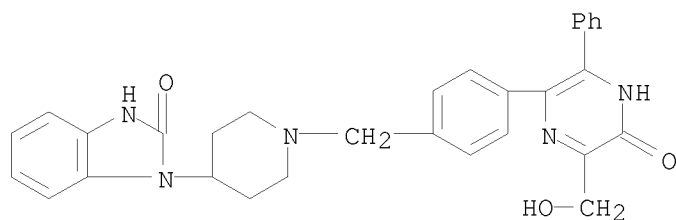
RN 616873-23-5 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(hydroxymethyl)-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidiny]-1,3-dihydro-, trifluoroacetate (salt) (9CI) (CA INDEX NAME)

CM 1

CRN 616873-22-4

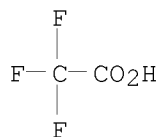
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CM 2

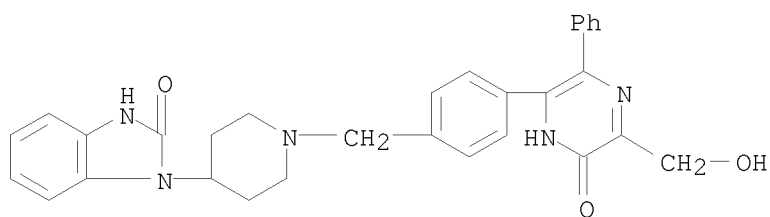
CRN 76-05-1

CMF C2 H F3 O2



RN 616873-24-6 CAPLUS

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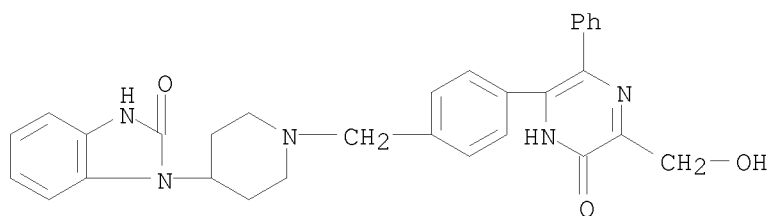
RN 616873-25-7 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(hydroxymethyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro-, trifluoroacetate (salt) (9CI) (CA INDEX NAME)

CM 1

CRN 616873-24-6

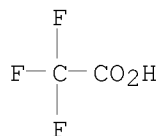
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CM 2

CRN 76-05-1

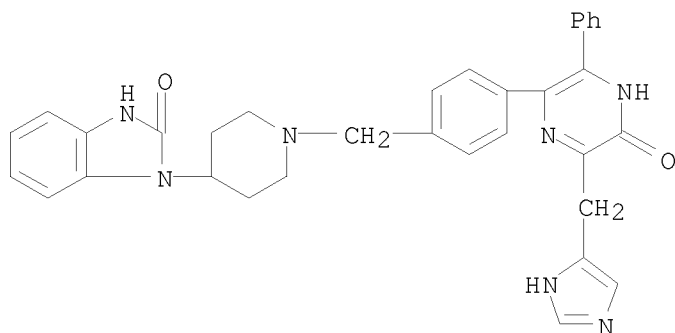
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RN 616873-26-8 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(1H-imidazol-4-ylmethyl)-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro- (9CI)

(CA INDEX NAME)



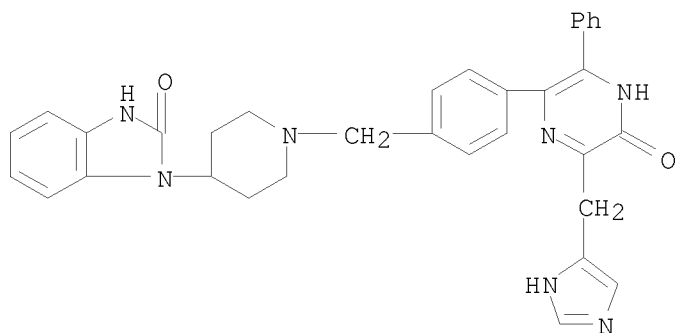
RN 616873-27-9 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(1H-imidazol-4-ylmethyl)-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidiny]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

CRN 616873-26-8

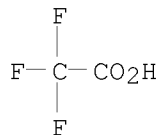
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CM 2

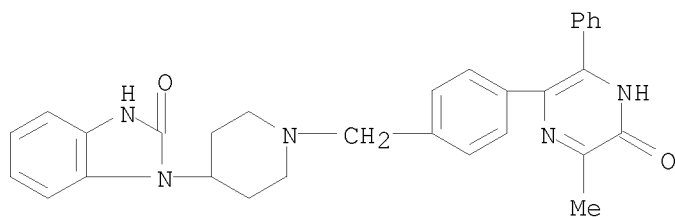
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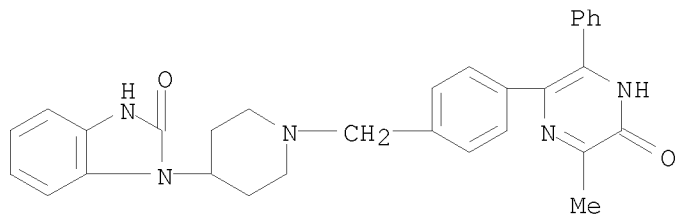
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CM 1

CRN 616873-28-0

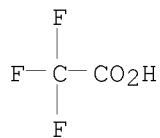
CMF C30 H29 N5 O2



CM 2

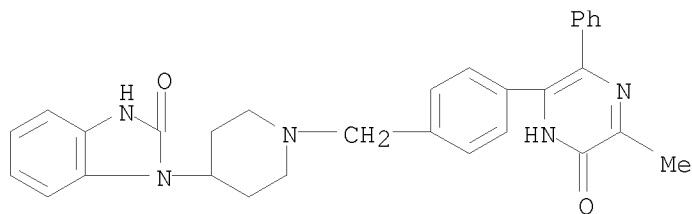
CRN 76-05-1

CMF C2 H F3 O2



RN 616873-30-4 CAPLUS

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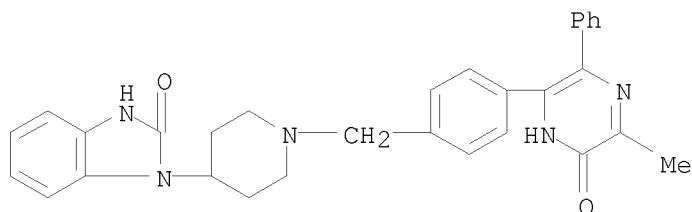
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CM 1

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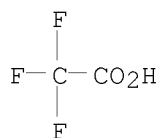
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CM 2

CRN 76-05-1

CMF C2 H F3 O2



L4 ANSWER 50 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:818232 CAPLUS

DOCUMENT NUMBER: 139:323527

TITLE: Preparation of triazolo[4,3-b]pyridazines and 2,3-diarylquinazolines for the treatment of cancer
INVENTOR(S): Barnett, Stanley F.; Defeo-Jones, Deborah; Haskell, Kathleen M.; Huber, Hans E.; Nahas, Deborah D.; Lindsley, Craig W.; Zhao, Zhijian; Hartman, George D.

PATENT ASSIGNEE(S): Merck & Co., Inc., USA

SOURCE: PCT Int. Appl., 170 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

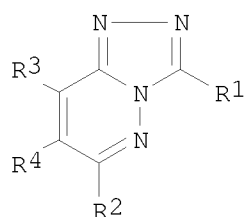
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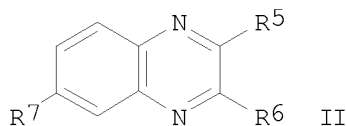
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WO 2003084473	A2	20031016	WO 2003-US10632	20030404
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KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,
 FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,
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 AU 2003226301 A1 20031020 AU 2003-226301 20030404
 US 2006142178 A1 20060629 US 2004-510068 20041004
 PRIORITY APPLN. INFO.: US 2002-370827P P 20020408
 US 2002-417202P P 20021009
 WO 2003-US10632 W 20030404

GI



I



II

AB Triazolo[4,3-b]pyridazines I [R1 = (un)substituted Ph, furyl, thienyl, pyridinyl; R2 = substituted NH2, OH; R3 = H, R4 = (un)substituted cycloalkyl, aryl; R3R4 = (un)substituted CH:CHCH:CH] and quinazolines II [R5, R6 = (un)substituted Ph; R7 = H, alkyl, halogen, OH, alkoxy] were prepared for use as inhibitors of one or two of the isoforms of Akt, a serine/threonine protein kinase, acting particularly on the pleckstrin homol. domain of Akt. Thus, 3,6-dichloropyridazine was converted to its 4-cyclobutyl derivative which was cyclized with BzNHNH2 and aminated to give I [R1 = Ph, R2 = NHCH2CMe2CH2NMe2, R3 = H, R4 = cyclobutyl]. This compound had IC50 for inhibition of Akt1 of 1.4 μ M.

IT 612847-16-2P 612847-18-4P 612847-20-8P
 612847-22-0P 612847-24-2P 612847-26-4P
 612848-79-0P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of triazolo[4,3-b]pyridazines and 2,3-diarylquinazolines for the treatment of cancer)

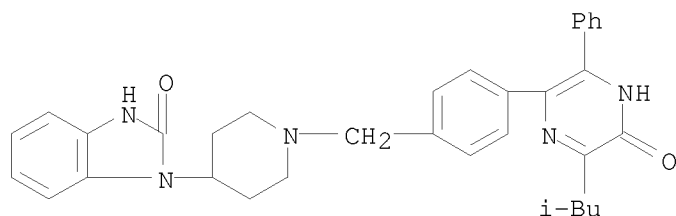
RN 612847-16-2 CAPLUS

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CM 1

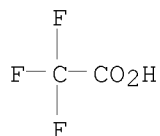
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CM 2

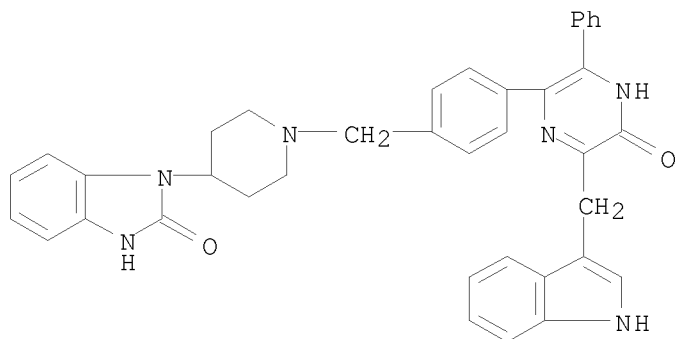
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RN 612847-18-4 CAPLUS
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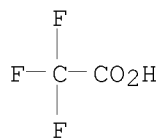
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CM 2

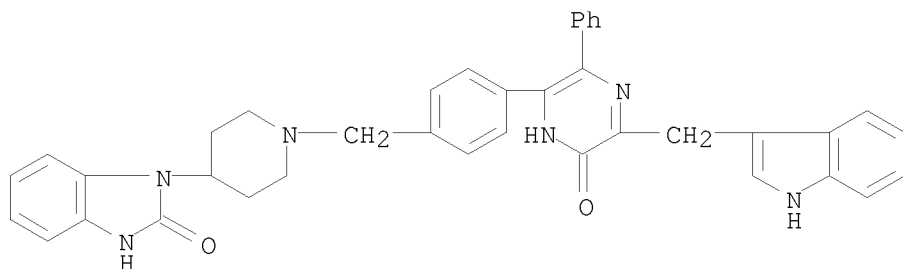
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CMF C2 H F3 O2



RN 612847-20-8 CAPLUS
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CM 1

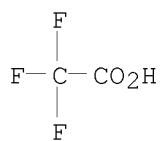
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CM 2

CRN 76-05-1

CMF C2 H F3 O2



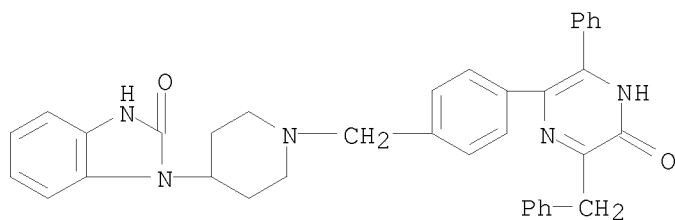
RN 612847-22-0 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-5-oxo-3-phenyl-6-(phenylmethyl)pyrazinyl]phenyl]methyl]-4-piperidinyl]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

CRN 612847-21-9

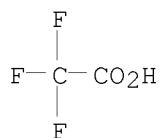
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CM 2

CRN 76-05-1

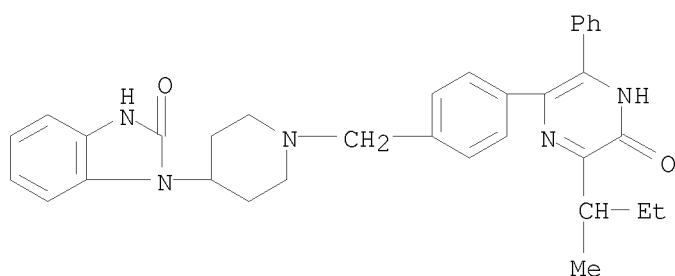
CMF C2 H F3 O2



RN 612847-24-2 CAPLUS
 CN 2H-Benzimidazol-2-one, 1-[1-[[4-[4,5-dihydro-6-(1-methylpropyl)-5-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidiny]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

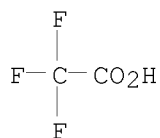
CM 1

CRN 612847-23-1
 CMF C33 H35 N5 O2



CM 2

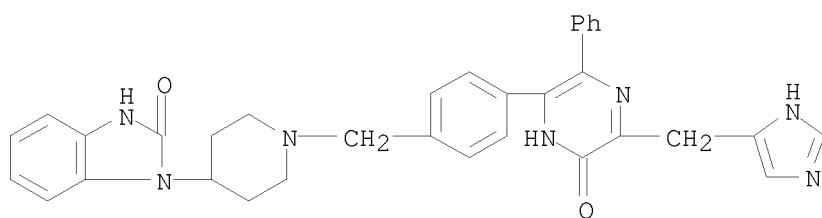
CRN 76-05-1
 CMF C2 H F3 O2



RN 612847-26-4 CAPLUS
 CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(1H-imidazol-4-ylmethyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidiny]-1,3-dihydro-, trifluoroacetate (9CI) (CA INDEX NAME)

CM 1

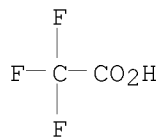
CRN 612847-25-3
 CMF C33 H31 N7 O2



CM 2

CRN 76-05-1

CMF C2 H F3 O2



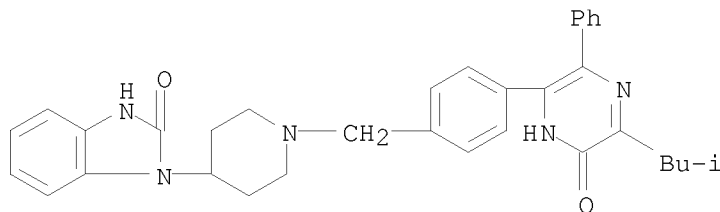
RN 612848-79-0 CAPLUS

CN 2H-Benzimidazol-2-one, 1-[1-[[4-[1,6-dihydro-5-(2-methylpropyl)-6-oxo-3-phenylpyrazinyl]phenyl]methyl]-4-piperidiny]-1,3-dihydro-, mono(trifluoroacetate) (9CI) (CA INDEX NAME)

CM 1

CRN 612848-78-9

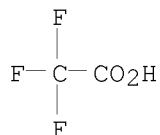
CMF C33 H35 N5 O2



CM 2

CRN 76-05-1

CMF C2 H F3 O2



L4 ANSWER 51 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:691939 CAPLUS

DOCUMENT NUMBER: 139:323890

TITLE: Design and synthesis of a thermally stable second-order nonlinear optical chromophore and its poled polymers

AUTHOR(S): Qin, Anjun; Yang, Zhou; Bai, Fenglian; Ye, Cheng

CORPORATE SOURCE: Organic Solids Laboratory, Center for Molecular Science, Institute of Chemistry, The Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China

SOURCE: Journal of Polymer Science, Part A: Polymer Chemistry (2003), 41(18), 2846-2853

CODEN: JPACEC; ISSN: 0887-624X

PUBLISHER: John Wiley & Sons, Inc.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A multiple charge-transfer second-order nonlinear optical (NLO) chromophore 2,3-bis(4-aminophenyl)-5,6-dicyanopyrazine (BAPDCP) was successfully designed and synthesized. It was characterized by ¹H NMR, mass spectrometry, Fourier transform IR spectroscopy, and elemental anal. The first hyperpolarizability β of BAPDCP was measured with the Hyper-Rayleigh scattering technique, which was $123.5 \pm 10 \times 10^{-30}$ esu. The donor-embedded prepolyimide and prepolyurea were also synthesized by a polyaddn. reaction. Thermogravimetric anal. and differential scanning calorimetry demonstrated that either the chromophore or the polymers have fine thermal stability. The thin films of prepolymers were prepared by coating on ITO glass substrate and poled by corona poling at elevating temperature. The second-order NLO coeffs. d_{33} of the films were measured by in situ second-harmonic generation measurements. The d_{33} were deduced as 27.7 and 16.5 pm/V for polyurea and polyimide at 1064 nm fundamental wavelength, resp. The onset depoling temperature of the polyimide and polyurea were both as high as 200°. To understand the temperature effect to the orientation thermal stability of polyimide, two films were treated at different final poling temps. The depoling exptl. results showed that the orientation stability is higher, as raising the final treated temperature but the d_{33} value are almost similar.

IT 614735-92-1P 614735-93-2P 614735-94-3P
614735-95-4P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(design and synthesis of a thermally stable second-order nonlinear optical chromophore and its poled polymers)

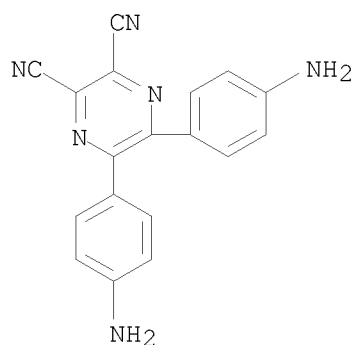
RN 614735-92-1 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-aminophenyl)-, polymer with
1,1'-[(3,4-diphenyl-2,5-thiophenediyl)di-4,1-phenylene]bis[1H-pyrrole-2,5-
dione] (9CI) (CA INDEX NAME)

CM 1

CRN 566149-78-8

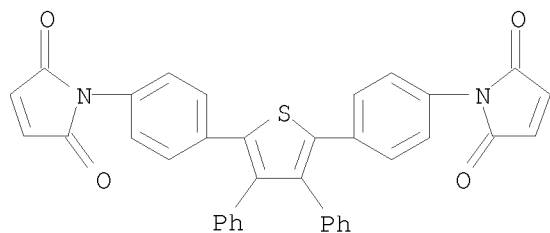
CMF C18 H12 N6



CM 2

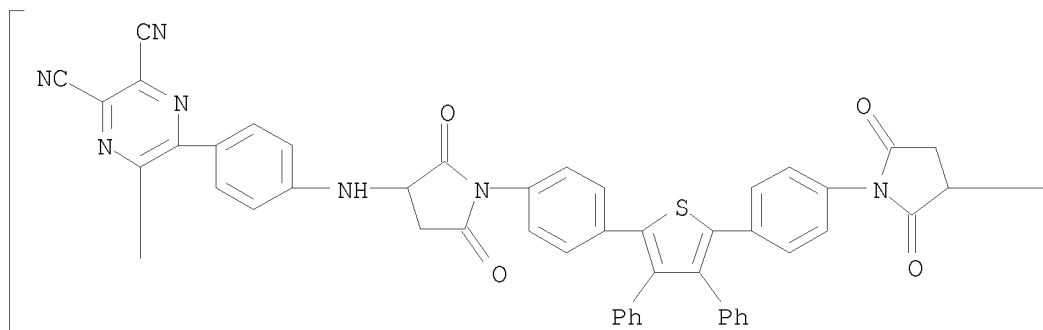
CRN 118338-94-6

CMF C36 H22 N2 O4 S

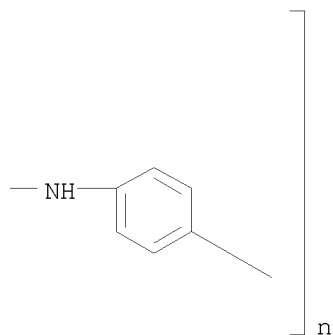


RN 614735-93-2 CAPLUS
 CN Poly[(5,6-dicyano-2,3-pyrazinediyl)-1,4-phenyleneimino(2,5-dioxo-3,1-pyrrolidinediyl)-1,4-phenylene(3,4-diphenyl-2,5-thiophenediyl)-1,4-phenylene(2,5-dioxo-1,3-pyrrolidinediyl)imino-1,4-phenylene] (9CI) (CA INDEX NAME)

PAGE 1-A



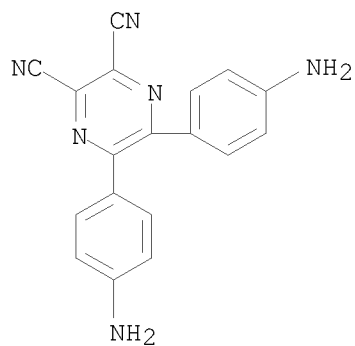
PAGE 1-B



RN 614735-94-3 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-aminophenyl)-, polymer with 1,4-diisocyanatobenzene (9CI) (CA INDEX NAME)

CM 1

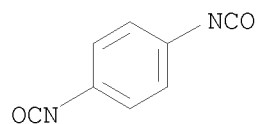
CRN 566149-78-8
 CMF C18 H12 N6



CM 2

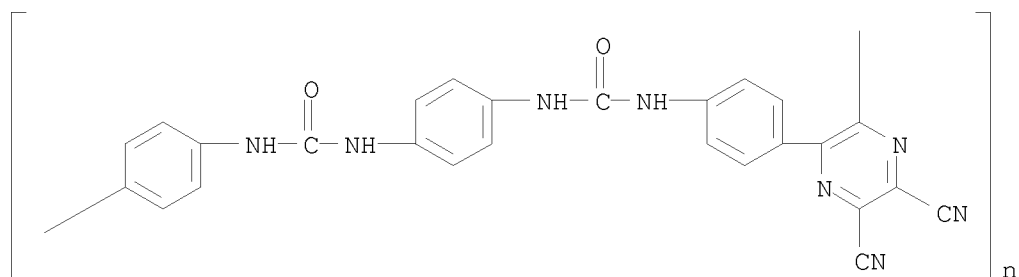
CRN 104-49-4

CMF C8 H4 N2 O2



RN 614735-95-4 CAPLUS

CN Poly[(5,6-dicyano-2,3-pyrazinediyl)-1,4-phenyleneiminocarbonylimino-1,4-phenyleneiminocarbonylimino-1,4-phenylene] (9CI) (CA INDEX NAME)



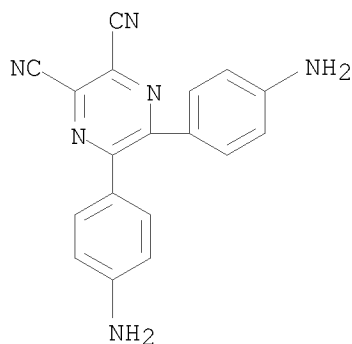
IT 566149-78-8P, 2,3-Bis(4-aminophenyl)-5,6-dicyanopyrazine
566149-79-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

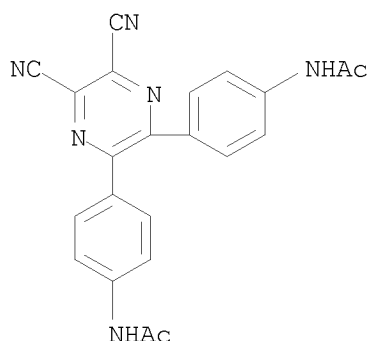
(in preparation of a thermally stable second-order nonlinear optical chromophore and its poled polymers)

RN 566149-78-8 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-aminophenyl)- (CA INDEX NAME)



RN 566149-79-9 CAPLUS
 CN Acetamide, N,N'-[(5,6-dicyano-2,3-pyrazinediyl)di-4,1-phenylene]bis- (9CI)
 (CA INDEX NAME)



REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 52 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:686664 CAPLUS

DOCUMENT NUMBER: 140:112809

TITLE: Synthesis and characteristics of dicyanopyrazine dyes containing spiropyran group

AUTHOR(S): Lee, Bum Hoon; Jaung, Jae Yun

CORPORATE SOURCE: Department of Fiber and Polymer Engineering, Hanyang University, Seoul, 133-791, S. Korea

SOURCE: Dyes and Pigments (2003), 59(2), 135-142

CODEN: DYPIDX; ISSN: 0143-7208

PUBLISHER: Elsevier Science Ltd.

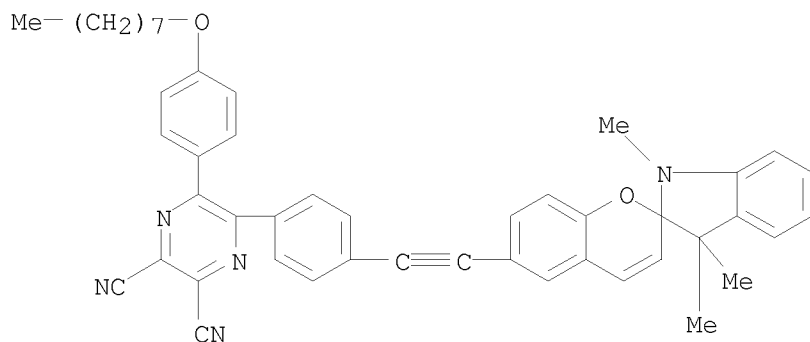
DOCUMENT TYPE: Journal

LANGUAGE: English

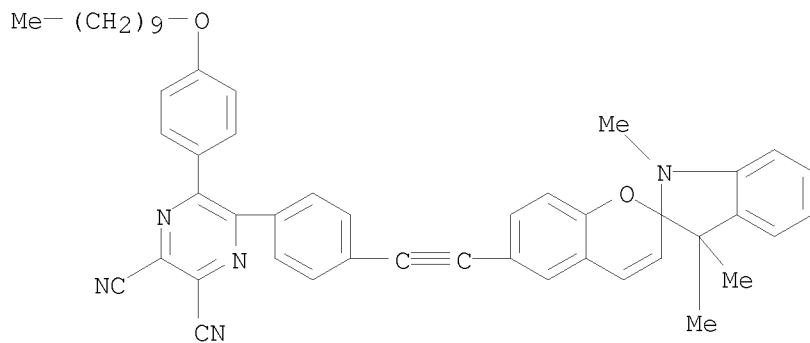
OTHER SOURCE(S): CASREACT 140:112809

AB 2,3-Dicyano-5-(4-ethynylphenyl)-6-(4-alkoxyphenyl)pyrazines (alkoxy = octyloxy or decyloxy) were synthesized by condensation of diaminomaleonitrile with the appropriate 1-(4-alkoxyphenyl)-2-(4-ethynylphenyl)ethanediones. The coupling reaction of 1,3,3-trimethyl-6'-iodospiro[2H-benzopyran-2,2'-indoline] with the above pyrazines gave 2 novel 2,3-dicyanopyrazine dyes containing a spiropyran group. The dyes had emission at 484 nm in chloroform solution as well as photochromic properties under UV irradiation. Their characteristics were evaluated by DSC and UV-visible and fluorescence spectroscopy. The combination of different functionalities such as 2,3-dicyanopyrazine and spiropyran was thus accomplished.

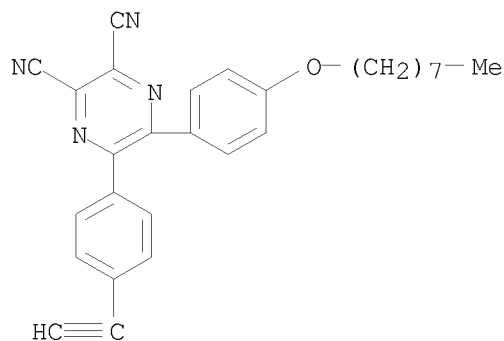
IT 484678-56-0P 484678-61-7P
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (dye; preparation of fluorescent photochromic dicyanopyrazine dyes containing
 spiropyran group)
 RN 484678-56-0 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5-[4-[(1',3'-dihydro-1',3',3'-trimethylspiro[2H-1-benzopyran-2,2'-[2H]indol]-6-yl)ethynyl]phenyl]-6-[4-(octyloxy)phenyl]- (9CI) (CA INDEX NAME)



RN 484678-61-7 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5-[4-(decyloxy)phenyl]-6-[4-[(1',3'-dihydro-1',3',3'-trimethylspiro[2H-1-benzopyran-2,2'-[2H]indol]-6-yl)ethynyl]phenyl]- (9CI) (CA INDEX NAME)

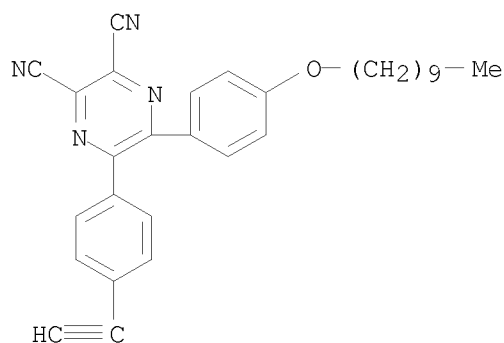


IT 484678-55-9P 484678-60-6P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (intermediate; preparation of fluorescent photochromic dicyanopyrazine dyes containing spiropyran group)
 RN 484678-55-9 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5-(4-ethynylphenyl)-6-[4-(octyloxy)phenyl]- (CA INDEX NAME)



RN 484678-60-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[4-(decyloxy)phenyl]-6-(4-ethynylphenyl)-
(CA INDEX NAME)



REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 53 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:417253 CAPLUS

DOCUMENT NUMBER: 139:140477

TITLE: A thermally stable chromophore with multi-intramolecular charge-transfer and its poled polymer

AUTHOR(S): Qin, Anjun; Hu, Kang; Li, Shaojun; Cheng, Ye

CORPORATE SOURCE: Center for Molecular Science, Organic Solids Laboratory, Institute of Chemistry, The Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China
SOURCE: Synthetic Metals (2003), 137(1-3), 1517-1518
CODEN: SYMEDZ; ISSN: 0379-6779

PUBLISHER: Elsevier Science B.V.

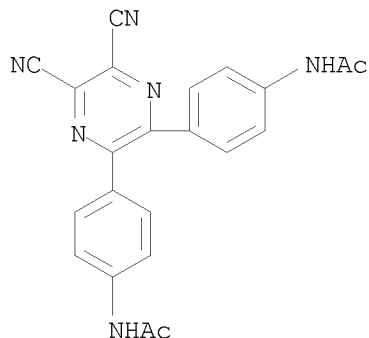
DOCUMENT TYPE: Journal

LANGUAGE: English

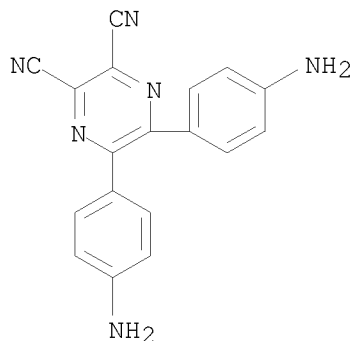
AB A new 2nd-order nonlinear optical (NLO) multi-intramol. charge-transfer chromophore 2,3-bis(4-aminophenyl)-5,6-dicyanopyrazine (DAPDCP) was designed and synthesized successfully. The maximum absorption wavelength λ_{max} of UV/visible spectrum in 1,4-dioxane is 423 nm and the m.p. is $>300^\circ$. The doped film of it in PMMA was prepared and poled by corona poling with increasing temperature step by step ($5^\circ/\text{min}$). The 2nd-order nonlinear optical coefficient d_{33} is 27.2 pm/V by the in-situ SHG measurements. The depoling expts. showed that the on-set temperature of the decay of orientation order is 105° , which is higher than that of the typical NLO chromophore N-(4-nitro phenyl)(s)-prolinol (NPP) doped in

PMMA. It demonstrated again that the harmony of thermal stable-nonlinearly-transparent trade-off can be established by using the designed X-type chromophore with multi-intramol. charge-transfer.

IT 566149-79-9P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (2,3-bis(4-aminophenyl)-5,6-dicyanopyrazine synthesis using)
 RN 566149-79-9 CAPLUS
 CN Acetamide, N,N'-[(5,6-dicyano-2,3-pyrazinediyl)di-4,1-phenylene]bis- (9CI)
 (CA INDEX NAME)



IT 566149-78-8P, 2,3-Bis(4-aminophenyl)-5,6-dicyanopyrazine
 RL: MOA (Modifier or additive use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (thermally stable chromophore with multi-intramol. charge-transfer and its behavior in poled PMMA)
 RN 566149-78-8 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-aminophenyl)- (CA INDEX NAME)



REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 54 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2003:307666 CAPLUS
 DOCUMENT NUMBER: 139:62059
 TITLE: Iron-Promoted Nucleophilic Additions to Diimine-Type Ligands: A Synthetic and Structural Study
 AUTHOR(S): Vallina, Ana Tesouro; Stoeckli-Evans, Helen; Neels, Antonia; Ensling, Juergen; Decurtins, Silvio
 CORPORATE SOURCE: Departement fuer Chemie und Biochemie, Universitaet Bern, Bern, CH-3012, Switz.
 SOURCE: Inorganic Chemistry (2003), 42(10), 3374-3382

CODEN: INOCAJ; ISSN: 0020-1669
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 139:62059

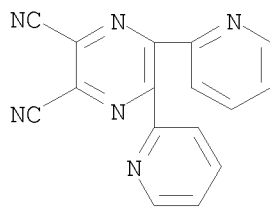
AB The authors report here three examples of the reactivity of protic nucleophiles with diimine-type ligands in the presence of FeII salts. In the 1st case, the Fe-promoted alcoholysis reaction of one nitrile group of the ligand 2,3-dicyano-5,6-bis(2-pyridyl)-pyrazine (L1) permitted the isolation of a stable E-imido-ester, $[\text{Fe}(\text{L1}')_2](\text{CF}_3\text{SO}_3)_2$ (1), which was characterized by spectroscopic studies (IR, ES-MS, Mossbauer), elemental anal., and crystallog. Compound 1 consists of mononuclear octahedrally coordinated FeII complexes where the FeII ion is in its low-spin state. The Fe-mediated nucleophilic attack of H₂O to the asym. ligand 2,3-bis(2-pyridyl)pyrido[3,4-b]pyrazine (L2) also was studied. In this context, the crystal structures of two hydration-oxidation FeIII products, $[\text{Fe}(\text{L2}')_2](\text{ClO}_4)_3 \cdot 3\text{MeCN}$ (2) and trans- $[\text{FeL2}''\text{Cl}_2]$ (3), are described. Compds. 2 and 3 are both mononuclear FeIII complexes where the metals occupy octahedral positions. In principle, L2 is expected to coordinate to metal ions through its bipyridine-type units to form a five-membered ring; however, this is not the case in compds. 2 and 3. In 2, the ligand coordinates through its pyridines and through the hydroxyl group attached to the pyrazine imino C after hydration, i.e., in an N,O,N tridentate manner. In compound 3, the ligand has suffered further transformations leading to a very stable diamido complex. In this case, the metal ion achieves its octahedral geometry by two pyridines, two amido N atoms, and two axial Cl atoms. Magnetic susceptibility measurements confirmed the spin state of these two FeIII species: compds. 2 and 3 are low-spin and high-spin, resp.

IT 118553-90-5

RL: RCT (Reactant); RACT (Reactant or reagent)
(iron-promoted nucleophilic addns. to diimine-type ligands)

RN 118553-90-5 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-di-2-pyridinyl- (CA INDEX NAME)



REFERENCE COUNT: 62 THERE ARE 62 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 55 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:52760 CAPLUS

DOCUMENT NUMBER: 139:323485

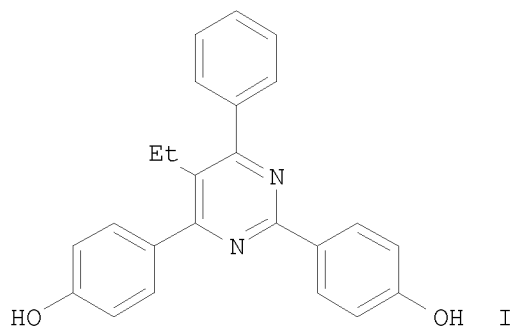
TITLE: Estrogenic diazenes: heterocyclic non-steroidal estrogens of unusual structure with selectivity for estrogen receptor subtypes

AUTHOR(S): Ghosh, Usha; Ganessunker, Deshanie; Sattigeri, Viswajanani J.; Carlson, Kathryn E.; Mortensen, Deborah J.; Katzenellenbogen, Benita S.; Katzenellenbogen, John A.

CORPORATE SOURCE: Department of Chemistry, University of Illinois, Urbana, IL, 61801, USA

SOURCE: Bioorganic & Medicinal Chemistry (2003), 11(4), 629-657

PUBLISHER:	CODEN: BMECEP; ISSN: 0968-0896
DOCUMENT TYPE:	Elsevier Science Ltd.
LANGUAGE:	Journal
OTHER SOURCE(S):	English
GI	CASREACT 139:323485



AB Estrogens regulate many biol. functions, often acting in a tissue-selective manner. Their tissue-selective action is believed to involve differential estrogen action through the two estrogen receptor (ER) subtypes, ER α and ER β , as well as differential interaction of the ligand-receptor complexes with promoters and coregulator proteins. In the latter case, selectivity is based on the induction of specific conformations of the ligand-ER complex, conformations that are influenced by the structure of the ligand. Estrogen pharmaceuticals having an ideal balance of tissue-selective activity are being sought for menopausal hormone replacement, breast cancer prevention and therapy, and other actions. To expand on the structural diversity of ER ligands that might show such tissue selectivity, we have prepared a series of diazenes (pyrazines, pyrimidines, and pyridazines), e.g. I, substituted with two to four aryl groups and various short-chain aliphatic substituents. All of the pyrazine and pyrimidines bind to ER, some with high affinity and with a considerable degree of preferential binding to either ER α or ER β . One pyrimidine and one pyrazine have ER α affinity preferences as high as 23 and 9, resp., and one pyrimidine has an ER β affinity preference of 8. The pyridazines, by contrast, are quite polar and have only very low binding affinity for the ER. In cell-based transcription assays, several of the pyrimidines and a pyrazine were found to be considerably more agonistic on ER α than on ER β . Because these triaryl diazenes have the largest vols. among the ER ligands so far investigated, their high affinity demonstrates the flexibility of the ligand binding pocket of the ERs and its tolerance for large substituents. Thus, these novel heterocyclic ligands expand the repertoire of chemical structures that bind to the estrogen receptor, and they could prove to be useful in elucidating the biol. behavior of the two ER subtypes and in forming the basis for new estrogen pharmaceuticals having desirable tissue selectivity.

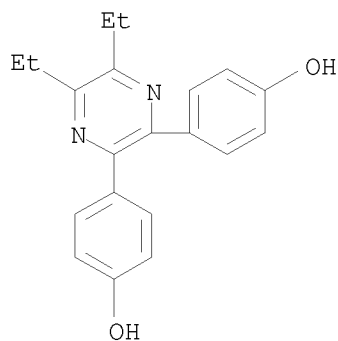
IT 612824-83-6P 612824-84-7P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)

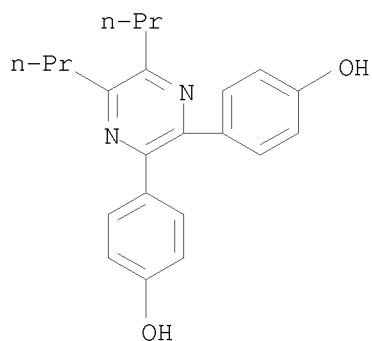
(heterocyclic non-steroidal estrogenic diazenes of unusual structure with selectivity for estrogen receptor subtypes)

RN 612824-83-6 CAPLUS

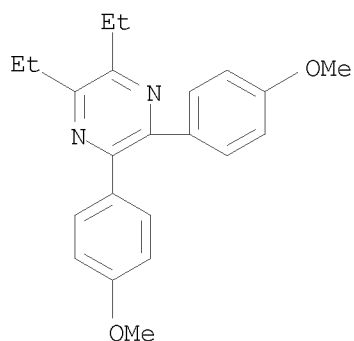
CN Phenol, 4,4'-(5,6-diethyl-2,3-pyrazinediyl)bis- (CA INDEX NAME)



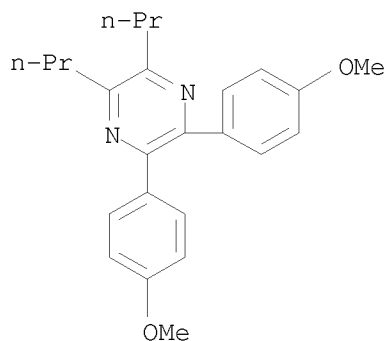
RN 612824-84-7 CAPLUS
 CN Phenol, 4,4'-(5,6-dipropyl-2,3-pyrazinediyl)bis- (CA INDEX NAME)



IT 199783-14-7P 612824-81-4P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (heterocyclic non-steroidal estrogenic diazenes of unusual structure
 with selectivity for estrogen receptor subtypes)
 RN 199783-14-7 CAPLUS
 CN Pyrazine, 2,3-diethyl-5,6-bis(4-methoxyphenyl)- (CA INDEX NAME)



RN 612824-81-4 CAPLUS
 CN Pyrazine, 2,3-bis(4-methoxyphenyl)-5,6-dipropyl- (CA INDEX NAME)

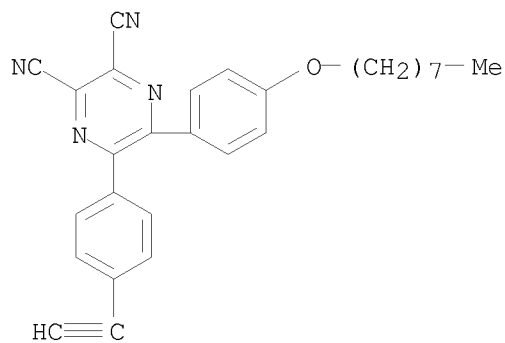


REFERENCE COUNT: 51 THERE ARE 51 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 56 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2002:670118 CAPLUS
 DOCUMENT NUMBER: 138:89775
 TITLE: Synthesis of spiropyran substituted 2,3-dicyanopyrazines
 AUTHOR(S): Lee, Bum Hoon; Jaung, Jae Yun; Jeong, Sung Hoon
 CORPORATE SOURCE: Department of Fiber and Polymer Engineering, Hanyang University, Seoul, 133-791, S. Korea
 SOURCE: Bulletin of the Korean Chemical Society (2002), 23(8), 1049-1050
 CODEN: BKCSDE; ISSN: 0253-2964
 PUBLISHER: Korean Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 138:89775
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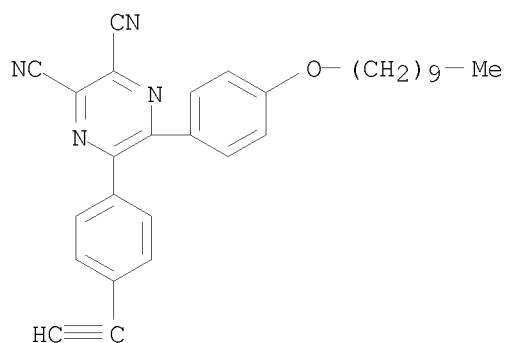
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Novel 2,3-dicyanopyrazines, e.g. I, were synthesized by the direct coupling reaction of 6-iodospiropyran II and 2,3-dicyanopyrazine derivs. with a long alkyl chain, e.g. III. It is expected that this procedure will be useful for combining two functional dye compds. that have totally different functionalities.
 IT 484678-55-9P 484678-60-6P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (synthesis of spiropyran substituted 2,3-dicyanopyrazines)
 RN 484678-55-9 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5-(4-ethynylphenyl)-6-[4-(octyloxy)phenyl]- (CA INDEX NAME)



RN 484678-60-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[4-(decyloxy)phenyl]-6-(4-ethynylphenyl)-
(CA INDEX NAME)

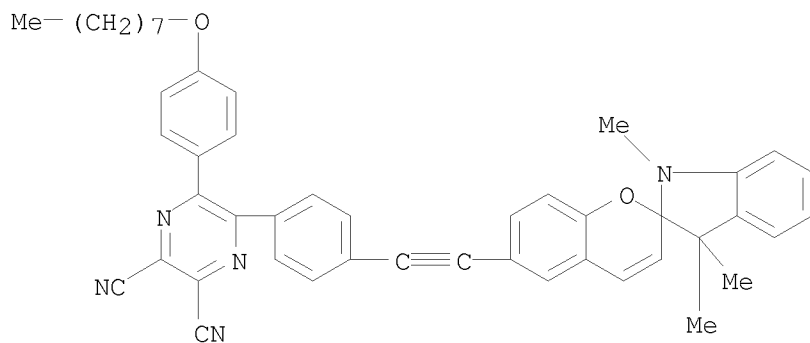


IT 484678-56-0P 484678-61-7P

RL: SPN (Synthetic preparation); PREP (Preparation)
(synthesis of spiropyran substituted 2,3-dicyanopyrazines)

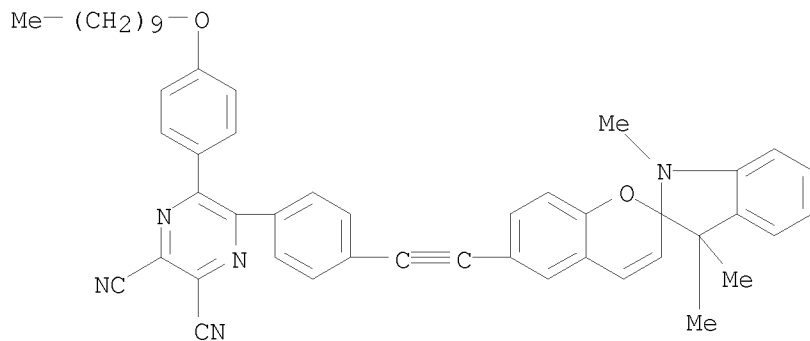
RN 484678-56-0 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[4-[(1',3'-dihydro-1',3',3'-trimethylspiro[2H-1-benzopyran-2,2'-[2H]indol]-6-yl)ethynyl]phenyl]-6-[4-(octyloxy)phenyl]- (9CI) (CA INDEX NAME)



RN 484678-61-7 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[4-(decyloxy)phenyl]-6-[4-[(1',3'-dihydro-1',3',3'-trimethylspiro[2H-1-benzopyran-2,2'-[2H]indol]-6-yl)ethynyl]phenyl]- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 57 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2002:506396 CAPLUS

DOCUMENT NUMBER: 138:221535

TITLE: Synthesis of 2,2'-bipyridyl methane- and pyridyl pyrazine-derivatives by the catalyst of organometallic compounds

AUTHOR(S): Uhm, Jae-Kook

CORPORATE SOURCE: Dept. of Chemistry, College of Natural Science, Keimyung Univ., Taegu, 704-701, S. Korea

SOURCE: Journal of the Korean Chemical Society (2002), 46(3), 301-305

CODEN: JKCSEZ; ISSN: 1017-2548

PUBLISHER: Korean Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: Korean

OTHER SOURCE(S): CASREACT 138:221535

AB Synthesis of pyridine and pyrazine derivs. from 2-pyridyl acetonitrile or pyrazine carbonitrile derivs. and diphenylacetylene using cobalt complexes via carbon-nitrogen cycloaddn. reaction have been studied. The cycloaddn. reaction of 2-pyridylacetonitrile and diphenylacetonitrile under $\text{CpCo}(\text{C}_2\text{H}_4)_2$ catalysts did not undergo but underwent in the presence of $\text{CpCo}(\text{CO})_2$, namely (Cyclopentadienyl)dicarbonylcobalt, and it is assumed that $\text{CpCo}(\text{C}_2\text{H}_4)_2$ is so unstable that it does not undergo substitution reaction with an alkyne. Pyrazinecarbonitrile and 5,6-dimethyl-2,3-pyrazine dicarbonitrile also underwent (2+2+2) cycloaddn. reaction with diphenylacetylene under $\text{CpCo}(\text{CO})_2$, but 2,3-pyrazinedicarbonitrile did not undergo cycloaddn. reaction at the same reaction condition due to lack of interaction between two Me substituents.

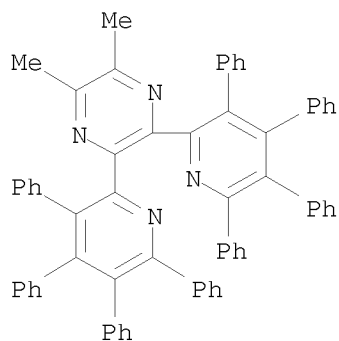
IT 500906-08-1P, 5,6-Dimethyl-2,3-bis(3,4,5,6-tetraphenyl-2-pyridyl)pyrazine

RL: SPN (Synthetic preparation); PREP (Preparation)

(synthesis of 2,2'-bipyridyl methane- and pyridyl pyrazine-derivs. by catalyst of organometallic compds.)

RN 500906-08-1 CAPLUS

CN Pyrazine, 2,3-dimethyl-5,6-bis(3,4,5,6-tetraphenyl-2-pyridinyl)- (CA INDEX NAME)



L4 ANSWER 58 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2002:487278 CAPLUS

DOCUMENT NUMBER: 137:325101

TITLE: New unsymmetrical difluoroaromatic compounds and estimation of their reactivities in nucleophilic substitution

AUTHOR(S): Keshtov, M. L.; Rusanov, A. L.; Keshtova, S. V.; Petrovskii, P. V.; Shchegolikhin, A. A.

CORPORATE SOURCE: A. N. Nesmeyanov Institute of Organoelement Compounds, Russian Academy of Sciences, Moscow, 119991, Russia
SOURCE: Russian Chemical Bulletin (Translation of Izvestiya Akademii Nauk, Seriya Khimicheskaya) (2002), 51(1), 117-123

CODEN: RCBUEY; ISSN: 1066-5285

PUBLISHER: Kluwer Academic/Consultants Bureau

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 137:325101

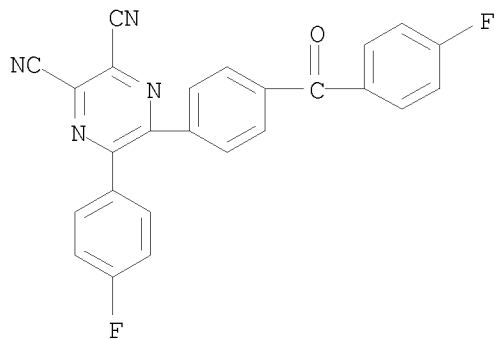
AB A series of previously unknown unsym. difluoroarom. compds., viz., p-fluorobenzoylphenyl(p-fluorophenyl)-substituted imidazoles, pyrazines, and quinoxalines, were synthesized according to multistep procedures with the use of chloral as the key compound. The reactivities of the resulting difluoroarom. compds. were estimated based on ^{19}F and ^{13}C NMR spectral data and the results of quantum-chemical calcns. The calculated charge densities on the Cipso atoms correlate linearly with the exptl. chemical shifts in the ^{19}F and ^{13}C NMR spectra. Difluoroarom. compds., which are characterized by $\delta\text{F} > -110$ and $\delta\text{C} > 163$ and by the charge d. on the Cipso atom higher than 0.08 e, are sufficiently activated to be used for the preparation of high-mol.-weight polyethers.

IT 473797-30-7P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (preparation and nucleophilic substitution reactivities of unsym. difluoroarom. compds.)

RN 473797-30-7 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5-[4-(4-fluorobenzoyl)phenyl]-6-(4-fluorophenyl)- (CA INDEX NAME)



REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 59 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2002:332281 CAPLUS

DOCUMENT NUMBER: 136:356381

TITLE: Composition containing an azaphthalocyanine and use in ink-jet printing inks and ink cartridges

INVENTOR(S): Gregory, Peter; Foster, Clive Edwin

PATENT ASSIGNEE(S): Avecia Limited, UK

SOURCE: PCT Int. Appl., 22 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002034844	A1	20020502	WO 2001-GB4374	20011001
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2001092047	A5	20020506	AU 2001-92047	20011001
PRIORITY APPLN. INFO.:			GB 2000-26467	A 20001027
			WO 2001-GB4374	W 20011001

OTHER SOURCE(S): MARPAT 136:356381

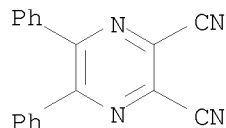
AB A process for coloration of paper comprises applying thereto a composition comprising a medium and an azaphthalocyanine compound Also claimed are compns. comprising azaphthalocyanines, novel azaphthalocyanines, a process for the coloration of a substrate other than paper and ink-jet printer cartridge comprising the azaphthalocyanine composition Thus, reacting benzil with diaminomaleonitrile, and mixing the resulting 2,3-dicyano-5,6-diphenylpyrazine with NiCl₂ suspended in quinoline gave a jade solid which was sulfonated with fuming sulfuric acid to give a dye having λ_{max} in water at 603 and 638 nm.

IT 52197-23-6P, 2,3-Dicyano-5,6-diphenylpyrazine

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(intermediate; composition containing azaphthalocyanine and use in ink-jet printing inks and ink cartridges)

RN 52197-23-6 CAPLUS
CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)

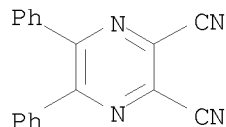


REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 60 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:286874 CAPLUS
DOCUMENT NUMBER: 136:306087
TITLE: Photosensitizer for photodynamic therapy
INVENTOR(S): Luk'yanets, E. A.; Negrimovskii, V. M.; Yuzhakova, O. A.; Kaliya, O. L.; Kuznetsova, N. A.; Pykhtina, E. V.; Ulanova, L. A.; Kovaleva, M. A.; Luzhkov, Yu. M.; Vorozhtsov, G. N.; Meerovich, G. A.; Torshina, N. L.
PATENT ASSIGNEE(S): Gosudarstvennyi Nauchnyi Tsentr Rf "NIOPIK", Russia
SOURCE: Russ., No pp. given
CODEN: RUXXE7
DOCUMENT TYPE: Patent
LANGUAGE: Russian
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RU 2164136	C2	20010320	RU 1998-116773	19980909

PRIORITY APPLN. INFO.: RU 1998-116773 19980909
OTHER SOURCE(S): MARPAT 136:306087
AB The photosensitizer is a water-soluble derivative of tetraazaporphyrin titanyl complexes with general formula R_nLTiO , wherein L is a ligand selected from a group including phthalocyanine, naphthalocyanine, and tetrapyrazinoporphyrine; R is a water-solubilization hydrophilic substituent; and $n = 3-10$. Novel photosensitizers show high efficiency in multivariable effect on deep tumor tissues and other pathol. neoplasms under hypoxia conditions.
IT 52197-23-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of titanyl pyrazinophthalocyanine as photosensitizer for photodynamic therapy)
RN 52197-23-6 CAPLUS
CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)



L4 ANSWER 61 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:216339 CAPLUS
DOCUMENT NUMBER: 136:270453
TITLE: Electrophotographic photoreceptor containing

tetraazaporphyrin derivative and charge-transporting polymer

INVENTOR(S): Komai, Yuko; Nanba, Michihiko; Shimada, Tomoyuki; Shoshi, Masayuki; Tadokoro, Kaoru; Tanaka, Chiaki; Sasaki, Masaomi

PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 57 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent

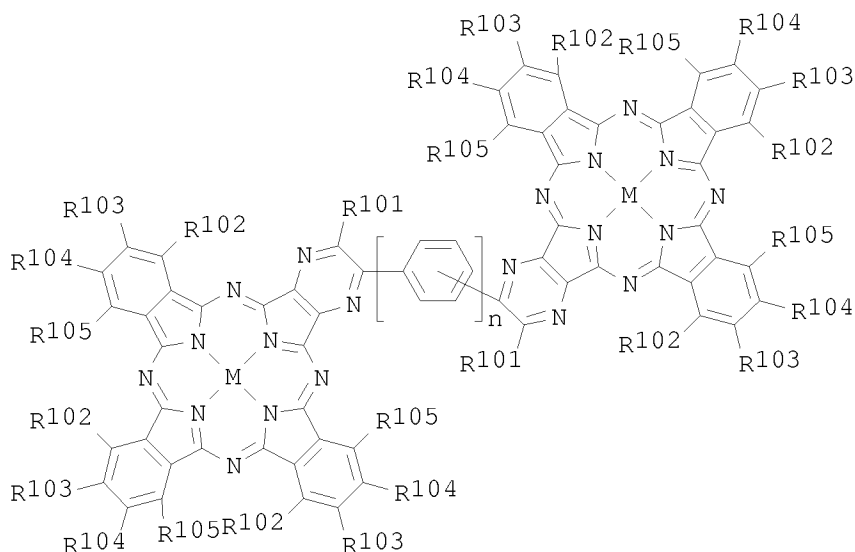
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2002082460	A	20020322	JP 2000-269095	20000905
PRIORITY APPLN. INFO.:			JP 2000-269095	20000905
OTHER SOURCE(S):	MARPAT 136:270453			

GI



I

AB The title photoreceptor has light-sensitive layers containing a tetraazaporphyrin derivative mixture and a charge-transporting compound on an electroconductive support, wherein the tetraazaporphyrin derivative mixture contains metal bis(tetraazaporphyrin derivative) I (R101 = H, alkyl, aryl; R102-105 = H, halo, alkyl, aryl, cycloalkyl, nitro, cyano; n = 1-2; M = metal, metal oxide, metal hydroxide, etc.) and a metal tetraazaporphyrin derivative. The photoreceptor shows the high sensitivity and the good wearing-resistance.

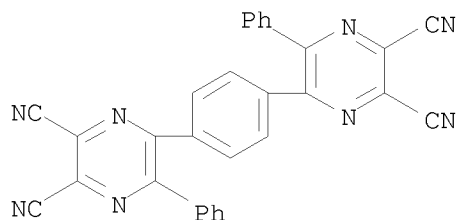
IT 160904-13-2

RL: RCT (Reactant); RACT (Reactant or reagent)

(tetraazaporphyrin derivative in electrophotog. photoreceptor)

RN 160904-13-2 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,5'-(1,4-phenylene)bis[6-phenyl- (9CI) (CA INDEX NAME)



L4 ANSWER 62 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:749418 CAPLUS

DOCUMENT NUMBER: 135:378975

TITLE: Hydrogen bonding in the inner-salt zwitterion and in two different charged forms of 5,6-bis(2-pyridyl)pyrazine-2,3-dicarboxylic acid

AUTHOR(S): Alfonso, Montserrat; Wang, Yi; Stoeckli-Evans, Helen

CORPORATE SOURCE: Institut de Chimie, Universite de Neuchatel, Neuchatel, CH-2007, Switz.

SOURCE: Acta Crystallographica, Section C: Crystal Structure Communications (2001), C57(10), 1184-1188

CODEN: ACSCEE; ISSN: 0108-2701

PUBLISHER: Munksgaard International Publishers Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

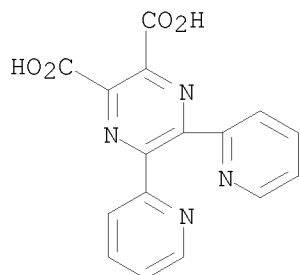
AB 5,6-Bis(2-pyridyl)pyrazine-2,3-dicarboxylic acid exists as an inner-salt zwitterion, 3-carboxy-5-(2-pyridinio)-6-(2-pyridyl)pyrazine-2-carboxylate, (Ia), C₁₆H₁₀N₄O₄. The adjacent pyridine and pyridinium rings are almost coplanar due to the presence of an intramol. H bond involving the pyridine N atom and the NH H atom of the pyridinium group. In the crystal of (Ia), symmetry-related mols. are H bonded via the carboxylic acid OH group and one of the carboxylate O atoms to form a polymer, which exhibits a channel-type structure. In the HCl, HClO₄ and HPF₆ salts, 6-carboxy-5-carboxylatopyrazine-2,3-diyl-di-2-pyridinium chloride 2.25-hydrate, (II), C₁₆H₁₁N₄O₄·Cl·2.25H₂O, 6-carboxy-5-carboxylatopyrazine-2,3-diyl-di-2-pyridinium perchlorate trihydrate, (IIIa), C₁₆H₁₁N₄O₄·ClO₄·3H₂O, and 6-carboxy-5-carboxylatopyrazine-2,3-diyl-di-2-pyridinium hexafluorophosphate trihydrate, (IIIb), C₁₆H₁₁N₄O₄·PF₆·3H₂O, both pyridine rings are protonated. In the perchlorate form, and in the isomorphous hexafluorophosphate form, the mol. possesses C₂ symmetry, with has a sym. intramol. H bond involving the adjacent carboxylate and carboxylic acid substituents. In the crystals of the chloride and perchlorate (or hexafluorophosphate) salts, H-bonded polymers are formed which are three-dimensional and 1-dimensional, resp. Crystallog. data are given.

IT 374115-73-8 374115-74-9 374115-75-0

RL: PRP (Properties)
(crystal structure of)

RN 374115-73-8 CAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-di-2-pyridinyl-, monohydrochloride, hydrate (4:9) (9CI) (CA INDEX NAME)



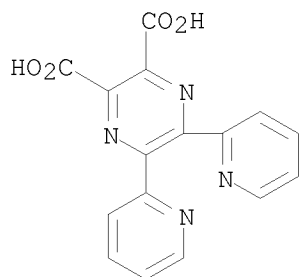
● HCl

● 9/4 H₂O

RN 374115-74-9 CAPLUS
 CN 2,3-Pyrazinedicarboxylic acid, 5,6-di-2-pyridinyl-, monoperchlorate, trihydrate (9CI) (CA INDEX NAME)

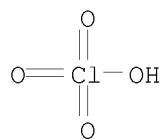
CM 1

CRN 374115-72-7
 CMF C16 H10 N4 O4



CM 2

CRN 7601-90-3
 CMF Cl H O4

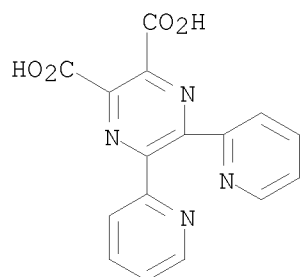


RN 374115-75-0 CAPLUS
 CN Phosphate(1-), hexafluoro-, hydrogen, compd. with 5,6-di-2-pyridinyl-2,3-pyrazinedicarboxylic acid (1:1), trihydrate (9CI) (CA INDEX NAME)

CM 1

CRN 374115-72-7

CMF C16 H10 N4 O4

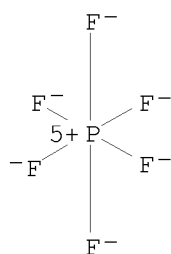


CM 2

CRN 16940-81-1

CMF F6 P . H

CCI CCS

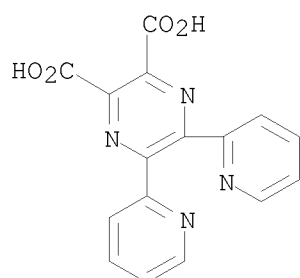


IT 374115-72-7P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(crystal structure of inner-salt zwitterionic)

RN 374115-72-7 CAPLUS

CN 2,3-Pyrazinedicarboxylic acid, 5,6-di-2-pyridinyl- (CA INDEX NAME)



REFERENCE COUNT:

10

THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 63 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:237341 CAPLUS

DOCUMENT NUMBER: 135:70060

TITLE: Nickel-mediated alcoholysis reaction of carbon-nitrogen triple bond: structural characterization of an unprecedented moisture stable imido ester with an E-configuration

AUTHOR(S): Bu, X.-H.; Du, M.; Tanaka, K.; Shionoya, M.; Shiro, M.

CORPORATE SOURCE: Department of Chemistry, Nankai University, Tianjin, 300071, Peop. Rep. China

SOURCE: Inorganic Chemistry Communications (2001), 4(3), 150-152

CODEN: ICCOFP; ISSN: 1387-7003

PUBLISHER: Elsevier Science S.A.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 135:70060

AB The x-ray structural characterization of a nickel complex of a moisture stable imido ester with an E-configuration, obtained from the nickel(II)-mediated alcoholysis reaction of the nitrile group of a newly synthesized 5,6-dicyano-2,3-di(2-pyridyl)pyrazine compound (L), is reported. This complex, [Ni(L1)2](ClO4)2, (L1 = 5-cyano-6-methoxy(imino)methyl-2,3-di(2-pyridyl)pyrazine) crystallized in the orthorhombic space group Pna21, R = 0.040, and adopts a compressed octahedral geometry with the E-configuration of the imido ester stabilized by the coordination of the imino-nitrogen to nickel.

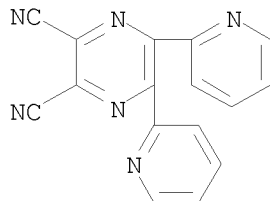
IT 118553-90-5P, 5,6-Dicyano-2,3-di(2-pyridyl)pyrazine

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(reactant; preparation and crystal structure of nickel(II) complex of moisture stable imido ester with E-configuration, cyano(methoxy(imino)methyl)di(pyridyl)pyrazine, prepared by nickel-mediated alcoholysis of carbon-nitrogen triple bond)

RN 118553-90-5 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-di-2-pyridinyl- (CA INDEX NAME)



REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 64 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:109455 CAPLUS

DOCUMENT NUMBER: 134:200724

TITLE: 5,6-Bis(2-pyridyl)-2,3-pyrazinedicarbonitrile

AUTHOR(S): Du, Miao; Bu, Xian He; Liu, He; Leng, Xue Bing

CORPORATE SOURCE: Department of Chemistry, Nankai University, Tianjin, 300071, Peop. Rep. China

SOURCE: Acta Crystallographica, Section C: Crystal Structure Communications (2001), C57(2), 201-202

CODEN: ACSCEE; ISSN: 0108-2701

PUBLISHER: Munksgaard International Publishers Ltd.

DOCUMENT TYPE: Journal

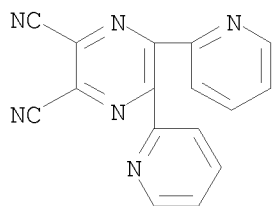
LANGUAGE: English

AB The crystal structure of the title compound contains two independent mols. with no significant difference in their structures. The pyrazine ring makes dihedral angles of 36.7(2) and 36.5(3)° with the two pyridine rings in one mol., and 43.1(2) and 38.4(1)° in the other. The dihedral angles between the two pyridine rings are 58.2(2) and 56.0(2)°, resp. The favored orientation of the pyridine rings is such that their N atoms face each other. Crystallog. data are given.

IT 118553-90-5P, 5,6-Bis(2-pyridyl)-2,3-pyrazinedicarbonitrile
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (preparation and crystal structure of)

RN 118553-90-5 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-di-2-pyridinyl- (CA INDEX NAME)



REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 65 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:18954 CAPLUS

DOCUMENT NUMBER: 134:86278

TITLE: Method for preparation of bis(2,3-dicyanopyrazin-5-yl)benzene derivatives

INVENTOR(S): Tadokoro, Kaoru; Shoji, Masayuki; Nanba, Michihiko; Shimada, Tomoyuki; Tanaka, Chiaki

PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent

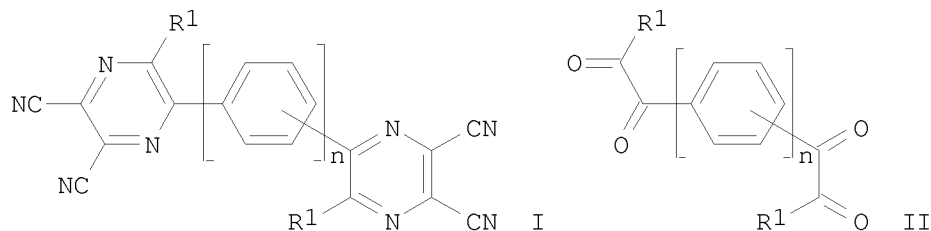
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001002661	A	20010109	JP 1999-175234	19990622
PRIORITY APPLN. INFO.:			JP 1999-175234	19990622
OTHER SOURCE(S):			CASREACT 134:86278; MARPAT 134:86278	

GI



AB The title compds. [I; R1 = H, (un)substituted lower alkyl or aryl; n =

1,2] are prepared by cyclocondensation of di(glyoxalyl)benzenes (II; R1, n = same as above) with diaminomaleonitrile in high yields. These compds. I are useful as electron-transport, charge-generating, optical recording, and photoelec. materials or intermediates thereof (no data). Thus, 0.1 mol 1,4-bisbenzil, 0.2 mol diaminomaleonitrile, and AcOH were refluxed with stirring for 6 h to give, after column chromatog. purification ad recrystn. from PhMe, 80% 1,4-bis(2,3-dicyano-5-phenylpyrazin-6-yl)benzene.

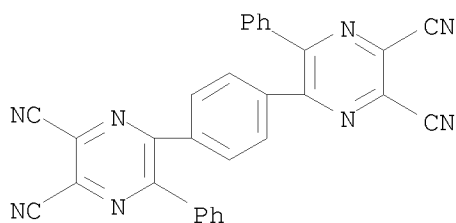
IT 160904-13-2P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(preparation of (dicyanopyrazinyl)benzene derivs. as electron-transport, charge-generating, optical recording, and photoelec. materials by cyclocondensation of di(glyoxalyl)benzenes with diaminomaleonitrile)

RN 160904-13-2 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,5'-(1,4-phenylene)bis[6-phenyl- (9CI) (CA INDEX NAME)



L4 ANSWER 66 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:2182 CAPLUS

DOCUMENT NUMBER: 134:78627

TITLE: Reaction product, process of producing same, electrophotographic photoconductor using same, electrophotographic apparatus having the photoconductor, and process cartridge for electrophotographic apparatus

INVENTOR(S): Tadokoro, Kaoru; Shoshi, Masayuki; Namba, Michihiko; Shimada, Tomoyuki; Tanaka, Chiaki

PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan

SOURCE: Eur. Pat. Appl., 85 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

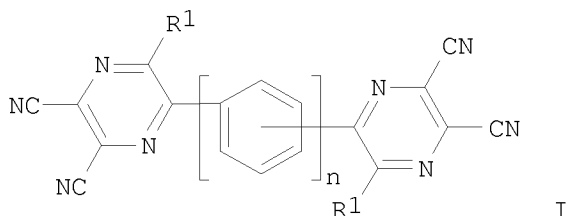
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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EP 1063264	A2	20001227	EP 2000-113409	20000623
EP 1063264	A3	20010829		
EP 1063264	B1	20060301		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2001329185	A	20011127	JP 2000-187990	20000622
US 6465648	B1	20021015	US 2000-602186	20000622
ES 2255920	T3	20060716	ES 2000-113409	20000623
US 2003013028	A1	20030116	US 2002-62428	20020205
US 6544701	B2	20030408		

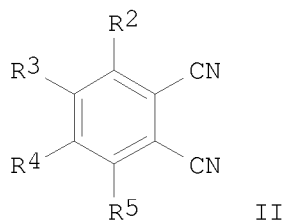
PRIORITY APPLN. INFO.: JP 1999-175213 A 19990622
JP 1999-175240 A 19990622
JP 1999-260632 A 19990914

JP 1999-260633	A 19990914
JP 1999-260634	A 19990914
JP 2000-70353	A 20000314
US 2000-602186	A3 20000622

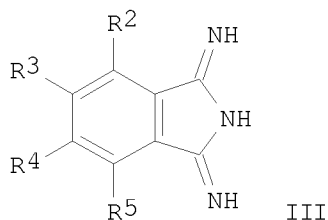
OTHER SOURCE(S): MARPAT 134:78627
GI



I



II



III

AB The invention relates to a novel reaction product, to an electrophotog. photoconductor using such reaction product, to an electrophotog. apparatus using the photoconductor and to a process cartridge for such electrophotog. apparatus. A product obtained by reacting a nitrile compound of the formula (I) with a phthalonitrile compound of the formula (II) or a 1,3-diimino-isindoline compound of the formula (III) and, if necessary, with a metal or a metal-containing compound: wherein R1-R5 and n are as defined in the specification. The product has charge generating properties and is useful for forming an electrophotog. photoconductor.

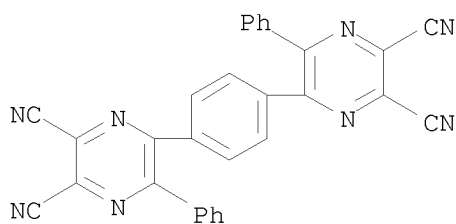
IT 160904-13-2D, copper and titanium complexes

RL: NUU (Other use, unclassified); RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)

(photoconductive material for electrophotog. apparatus having photoconductor and process cartridge)

RN 160904-13-2 CAPLUS

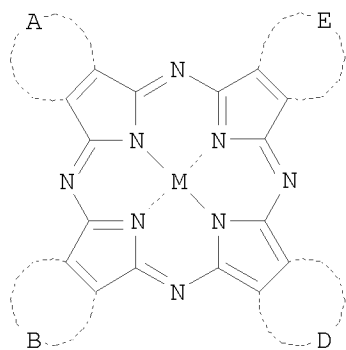
CN 2,3-Pyrazinedicarbonitrile, 5,5'-(1,4-phenylene)bis[6-phenyl- (9CI) (CA INDEX NAME)



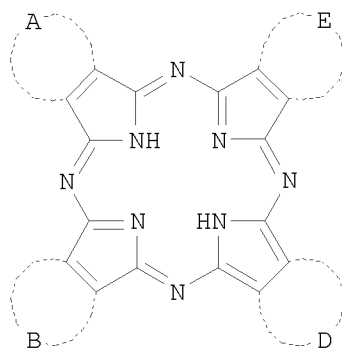
L4 ANSWER 67 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2000:377090 CAPLUS
DOCUMENT NUMBER: 133:36061

TITLE: Electrophotographic photoreceptor containing tetraazaporphyrin
 INVENTOR(S): Tadokoro, Kaoru; Shoshi, Masayuki; Nanba, Michihiko; Shimada, Tomoyuki; Tanaka, Chiaki
 PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 33 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000155434	A	20000606	JP 1998-329980	19981119
PRIORITY APPLN. INFO.:			JP 1998-329980	19981119
OTHER SOURCE(S):	MARPAT 133:36061			
GI				



I



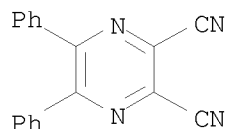
II

AB The photoreceptor comprises an elec. conducting support having thereon a photosensitive layer containing a tetraazaporphyrin I or II [A, B, C, D, and/or E = III, IV; r1-6 = H, halo, (un)substituted alkyl, (un)substituted aryl; (un)substituted cycloalkyl, NO₂; r1 and R2, and r3-6 may form a ring; M = metal atom, metal oxide, metal hydroxide, metallic halide]. The photoreceptor, showing improved chargeability and high sensitivity, is suitable for high-speed copying machine, laser printer, etc.

IT 52197-23-6, 2,3-Dicyano-5,6-diphenylpyrazine
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (electrophotog. photoreceptor containing tetraazaporphyrin from)

RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)



L4 ANSWER 68 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2000:375560 CAPLUS

DOCUMENT NUMBER: 133:105433

TITLE: Synthesis and investigation of aromatic polyethers bearing acetylenic groups in backbones

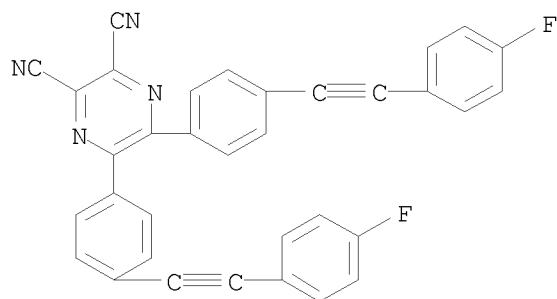
AUTHOR(S): Rusanov, A. L.; Keshtov, M. L.; Keshtova, S. V.;
Belomonina, N. M.; Mikitaev, A. K.; Shchegolikhin, A.
N.
CORPORATE SOURCE: Nesmeyanov Institute of Organoelement Compounds,
Russian Academy of Sciences, Moscow, 117813, Russia
SOURCE: Vysokomolekulyarnye Soedineniya, Seriya A i Seriya B
(1998), 40(3), 397-402
CODEN: VSSBEE; ISSN: 1023-3091
PUBLISHER: MAIK Nauka
DOCUMENT TYPE: Journal
LANGUAGE: Russian

AB New aromatic difluoroarom. compds. containing acetylenic groups were obtained.
Reactions of these monomers with various bisphenols under the conditions
of nucleophilic substitution yielded aromatic polyethers. The glass
transition temperature of the resulting polymers lies in the range of
145-280°C, and the temperature of 10% weight loss measured upon heating in
air lies in the range of 410-530°C. These polymers produce
cross-linked structures at elevated temps.

IT 194936-26-0P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(monomer; synthesis and investigation of aromatic polyethers bearing
acetylenic groups in backbones)

RN 194936-26-0 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[(4-fluorophenyl)ethynyl]phenyl]-
(9CI) (CA INDEX NAME)



IT 244623-42-5P 244623-47-0P 244623-52-7P
244623-57-2P 244623-61-8P 244623-65-2P
244623-69-6P 244623-73-2P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(synthesis and investigation of aromatic polyethers bearing acetylenic
groups in backbones)

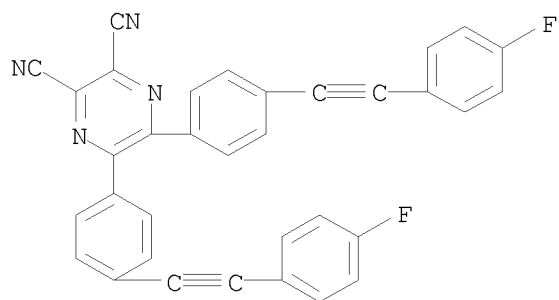
RN 244623-42-5 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[(4-fluorophenyl)ethynyl]phenyl]-,
polymer with 4,4'-(1-methylethylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 194936-26-0

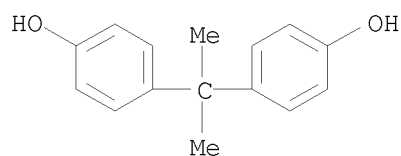
CMF C34 H16 F2 N4



CM 2

CRN 80-05-7

CMF C15 H16 O2



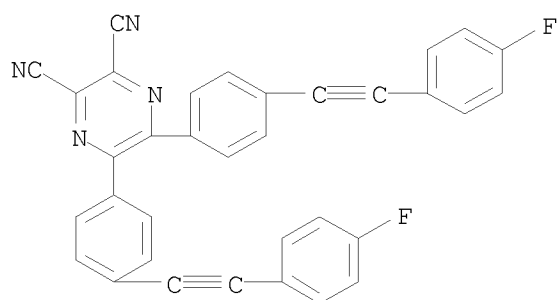
RN 244623-47-0 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[(4-fluorophenyl)ethynyl]phenyl]-, polymer with 4,4'-(9H-fluoren-9-ylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 194936-26-0

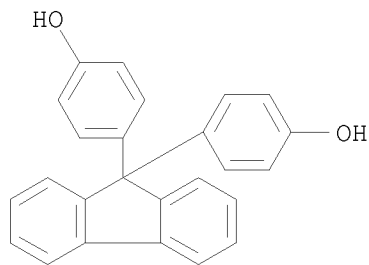
CMF C34 H16 F2 N4



CM 2

CRN 3236-71-3

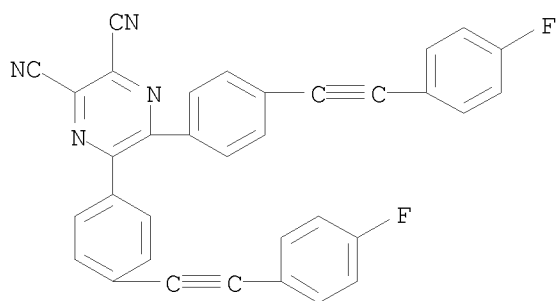
CMF C25 H18 O2



RN 244623-52-7 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[(4-fluorophenyl)ethynyl]phenyl]-,
 polymer with 3,3-bis(4-hydroxyphenyl)-1(3H)-isobenzofuranone (9CI) (CA
 INDEX NAME)

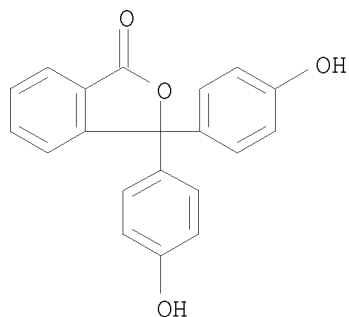
CM 1

CRN 194936-26-0
 CMF C34 H16 F2 N4



CM 2

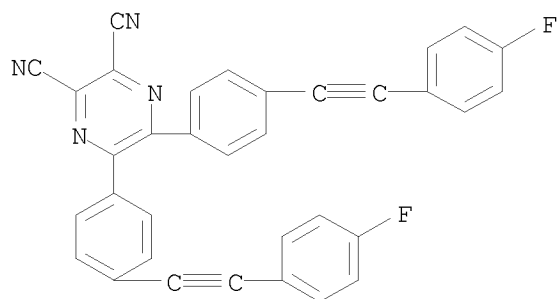
CRN 77-09-8
 CMF C20 H14 O4



RN 244623-57-2 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[(4-fluorophenyl)ethynyl]phenyl]-,
 polymer with 4,4'-(1-phenylethylidene)bis[phenol] (9CI) (CA INDEX NAME)

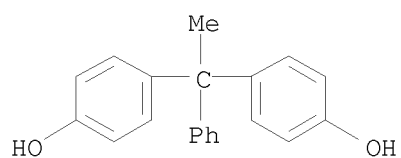
CM 1

CRN 194936-26-0
 CMF C34 H16 F2 N4



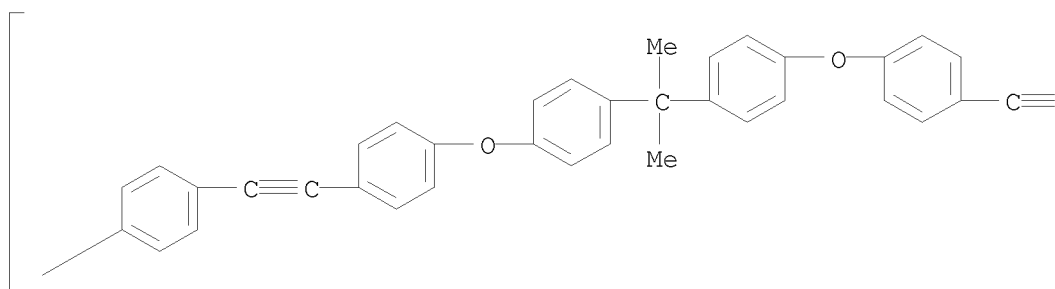
CM 2

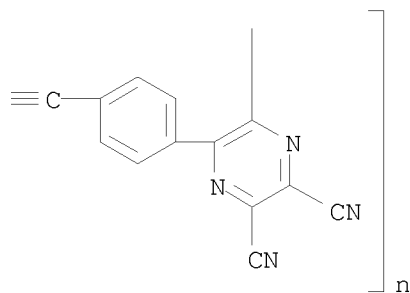
CRN 1571-75-1
 CMF C20 H18 O2



RN 244623-61-8 CAPLUS
 CN Poly[(5,6-dicyano-2,3-pyrazinediyl)-1,4-phenylene-1,2-ethynediyl-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenyleneoxy-1,4-phenylene-1,2-ethynediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

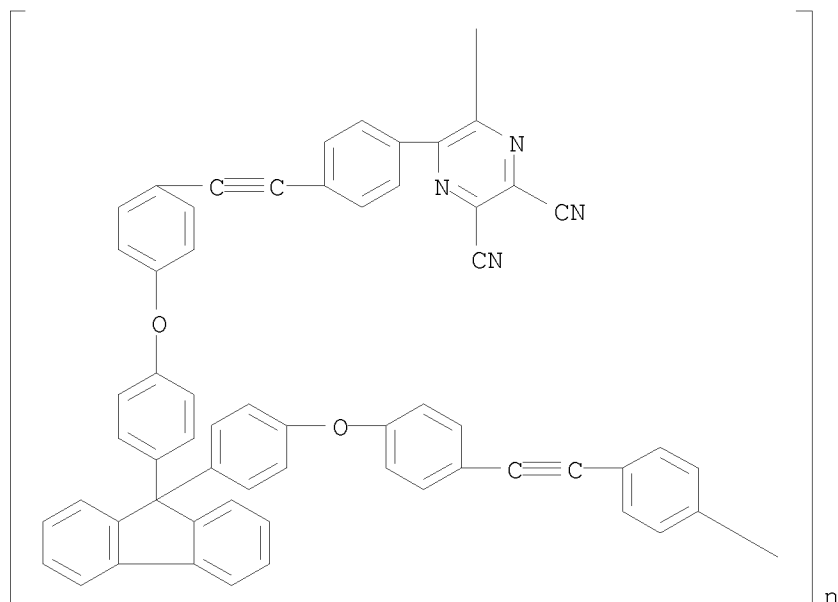
PAGE 1-A





RN 244623-65-2 CAPLUS

CN Poly[(5,6-dicyano-2,3-pyrazinediyl)-1,4-phenylene-1,2-ethynediyl-1,4-phenyleneoxy-1,4-phenylene-9H-fluoren-9-ylidene-1,4-phenyleneoxy-1,4-phenylene-1,2-ethynediyl-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 244623-69-6 CAPLUS

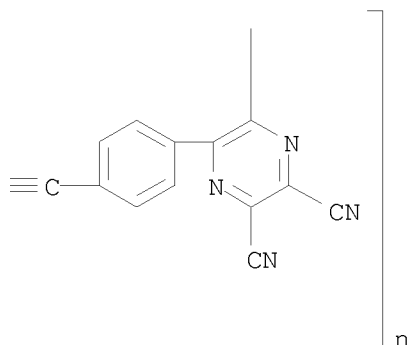
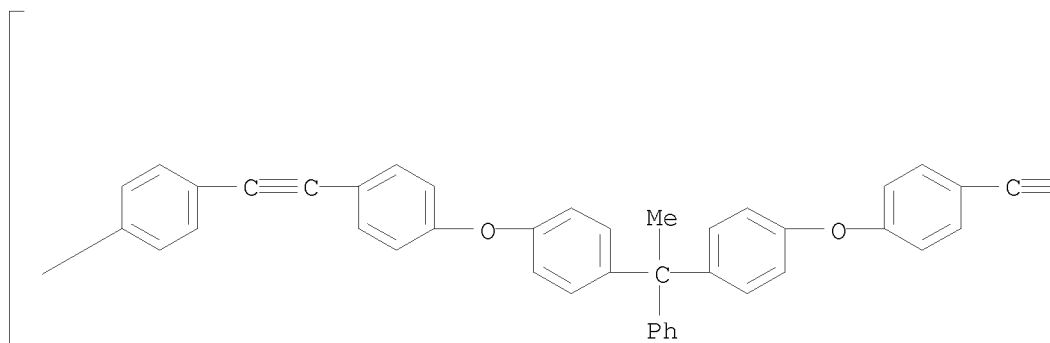
CN Poly[(5,6-dicyano-2,3-pyrazinediyl)-1,4-phenylene-1,2-ethynediyl-1,4-phenyleneoxy-1,4-phenylene(3-oxo-1(3H)-isobenzofuranylidene)-1,4-phenyleneoxy-1,4-phenylene-1,2-ethynediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

RN 244623-73-2 CAPLUS

CN Poly[(5,6-dicyano-2,3-pyrazinediyl)-1,4-phenylene-1,2-ethynediyl-1,4-phenyleneoxy-1,4-phenylene(1-phenylethylidene)-1,4-phenyleneoxy-1,4-phenylene-1,2-ethynediyl-1,4-phenylene] (9CI) (CA INDEX NAME)



L4 ANSWER 69 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2000:356856 CAPLUS
 DOCUMENT NUMBER: 133:5841
 TITLE: Tetraazaporphyrin mixed derivatives useful for charge carriers of electrophotographic photoreceptors and their manufacture
 INVENTOR(S): Tadokoro, Kaoru; Shoshi, Masayuki; Nanba, Michihiko; Shimada, Tomoyuki; Tanaka, Chiaki
 PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000144005	A	20000526	JP 1998-326779	19981117
PRIORITY APPLN. INFO.:			JP 1998-326779	19981117

OTHER SOURCE(S): MARPAT 133:5841

AB The derivs. are manufactured by the reaction of a mixture of (A) (optionally substituted) 2,3-dicyanopyrazine compound, (B) (optionally substituted) phthalonitrile compound or/and (C) (optionally substituted)

1,3-diiminoisoindoline derivative with a metal compound Thus, mixing 2,3-dicyano-5,6-diphenylpyrazine 0.2 with phthalonitrile 0.2 and Cu(I) chloride 0.1 mol in 1000 mL α -chloronaphthalene, heating at 190-210° for 3 h while stirring and working up gave a porphyrin compound mixture

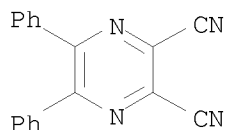
IT 52197-23-6DP, 2,3-Dicyano-5,6-diphenylpyrazine, mixed porphyrin copper complexes with other dicyano compds.

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(tetraazaporphyrin derivs. useful for charge carriers of electrophotog. photoreceptors and manufacture)

RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)



L4 ANSWER 70 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2000:89346 CAPLUS

DOCUMENT NUMBER: 132:142086

TITLE: Tetrapyrazinoporphyrazine derivatives with new crystal type and electrophotographic photoreceptor using them

INVENTOR(S): Tadokoro, Kaoru; Shoshi, Masayuki; Nanba, Michihiko

PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 24 pp.

CODEN: JKXXAF

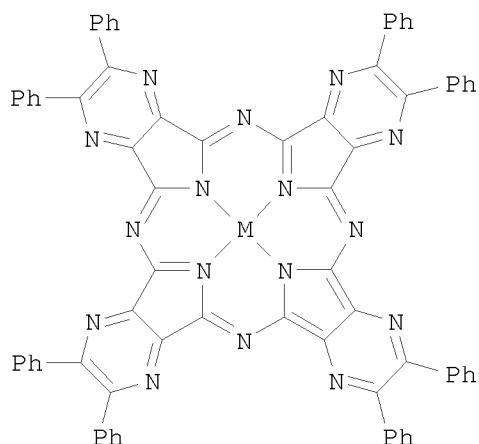
DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2000038390	A	20000208	JP 1998-209897	19980724
PRIORITY APPLN. INFO.:			JP 1998-209897	19980724
OTHER SOURCE(S):	MARPAT	132:142086		
GI				

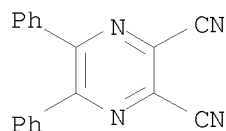


I

AB The tetrapyrazinoporphyrazine derivs. I (M = H, atomic groups or compds. capable of coordination linkage with tetrapyrazinoporphyrazine) shows diffraction peaks at Bragg's angle ($2\theta \pm 0.3^\circ$) 4.6, 7.1, 8.0, and/or 24.0° in its x-ray diffraction spectrum from CuK α line. The electrophotog. photoreceptor has a photosensitive layer containing ≥ 1 I on an elec. conductive support. The photoreceptor shows high sensitivity.

IT 52197-23-6P, 2,3-Dicyano-5,6-diphenylpyrazine
 RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and reaction of; electrophotog. photoreceptor containing octaphenyltetrapyrazinoporphyrazine derivs. as charge-generating agent with high sensitivity)

RN 52197-23-6 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)



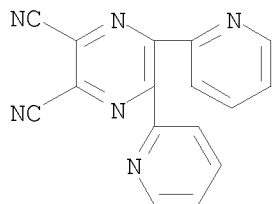
L4 ANSWER 71 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2000:73778 CAPLUS
 DOCUMENT NUMBER: 132:202268
 TITLE: Synthesis of octa(2-heteroaryl) azaphthalocyanines
 AUTHOR(S): Morkved, Eva H.; Ossletten, Hege; Kjosen, Helge; Bjorlo, Olav
 CORPORATE SOURCE: Dep. Chem., Norwegian Univ. Sci. Technology, Trondheim, Norway
 SOURCE: Journal fuer Praktische Chemie (Weinheim, Germany) (2000), 342(1), 83-86
 CODEN: JPCHF4; ISSN: 1436-9966
 PUBLISHER: Wiley-VCH Verlag GmbH
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Magnesium, copper(II) and nickel(II) complexes of octasubstituted azaphthalocyanines (3-5) were prepared from di-fur-2-yl, di-thien-2-yl and di-pyrid-2-yl pyrazine-2,3-dicarbonitriles (2). 2 Were prepared in good yields from condensations of diaminomaleonitrile and the diketones 2,2'-furil, 2,2'-thenil and 2,2'-pyridil. AzaPcs 3-5 give green pyridine solns. with Q-bands at 650-670 nm and ϵ -values of 60,000-190,000.

IT 118553-90-5P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (for preparation of magnesium and copper(II) octa(heteroaryl)azaphthalocyanine complexes)

RN 118553-90-5 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-di-2-pyridinyl- (CA INDEX NAME)



REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 72 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1999:670507 CAPLUS

DOCUMENT NUMBER: 132:22680

TITLE: Measurement and Prediction of Hydrophobicity Parameters for Highly Lipophilic Compounds: Application of the HPLC Column-Switching Technique to Measurement of log P of Diarylpyrazines

AUTHOR(S): Yamagami, Chisako; Araki, Kozue; Ohnishi, Kyoko; Hanasato, Kaoru; Inaba, Haruko; Aono, Masahiro; Ohta, Akihiro

CORPORATE SOURCE: Kobe Pharmaceutical University, Higashinada Kobe, 658-8558, Japan

SOURCE: Journal of Pharmaceutical Sciences (1999), 88(12), 1299-1304

CODEN: JPMSAE; ISSN: 0022-3549

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB In the preparatory stage of structure-activity relation (QSAR) studies of anti-platelet aggregant pyrazine derivs., log P values (P: 1-octanol/H₂O partition coefficient) of diarylpyrazines were measured by a newly developed HPLC column-switching technique. The system consists of 2 processes: (1) adsorption of the sample at the top end of a short precolumn, and then (2) quantifying the enriched analyte by a conventional anal. column. By using the log P values thus obtained, the correction factor for the steric hindrance caused by the vicinal di-Ph groups was estimated. The log k values (k; retention factor) were also measured with MeOH-buffer (pH 7.4) eluents and related to log P. The eluent of 50% MeOH content (M50) gave a good linear relation over a wide range of log P (-0.3 < log P < 5.2), indicating that log k_{M50} parameter is useful for predicting the log P value.

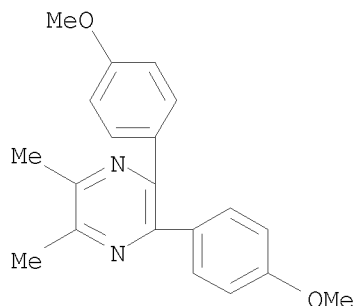
IT 106615-37-6

RL: PRP (Properties)

(measurement and prediction of hydrophobicity parameters for highly lipophilic compds. from HPLC column-switching technique measurement of log P of diarylpyrazines)

RN 106615-37-6 CAPLUS

CN Pyrazine, 2,3-bis(4-methoxyphenyl)-5,6-dimethyl- (CA INDEX NAME)



REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 73 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1999:645500 CAPLUS

DOCUMENT NUMBER: 132:17394

TITLE: Discotic liquid crystals of transition metal complexes. Part 26. Supramolecular structures of long-chain-substituted octaphenyltetrapyrazinoporphyrazine derivatives

AUTHOR(S): Ohta, Kazuchika; Azumane, Satoru; Kawahara, Wataru; Kobayashi, Nagao; Yamamoto, Iwao

CORPORATE SOURCE: Faculty of Textile Science and Technology, Department of Functional Polymer Science, Shinshu University, Ueda, 386-8567, Japan

SOURCE: Journal of Materials Chemistry (1999), 9(10), 2313-2320

CODEN: JMACEP; ISSN: 0959-9428

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Ten novel columnar liquid crystals, [octakis(4-alkoxyphenyl)tetrapyrazinoporphyrazinato]metal(II) (abbreviated as (CnO)8-M; n = 10, 12; M = Cu, Ni) and [octakis(3,4-dialkoxyphenyl)tetrapyrazinoporphyrazinato]metal(II) (abbreviated as (CnO)16-M; n = 8, 10, 12; M = Cu, Ni), were synthesized and characterized. The mesophase structures of (CnO)8-M are very sensitive to the central metal and closely related to the aggregate structures in the solution. The (CnO)16-M derivs. exhibit a Dhd mesophase at lower temps. and a Drd (C2/m) phase at higher temps. Thus, the mesophase with higher symmetry appears at lower temps. for these (CnO)16-M derivs. This is quite opposite to the general tendency for the higher symmetry mesophase to appear at higher temps. To further clarify the structures of both the mesophases and the aggregate in solns., the electronic and magnetic CD (MCD) spectra were measured. The Q band of (CnO)16-M in n-hexane showed a wide Davidov splitting. Such a wide splitting of the Q band can be attributed to the formation of dimers. The dimerization was confirmed by vapor pressure osmometric (VPO) measurements in n-hexane solution. Also, the spectrum of the thin film in the mesophase in the absence of solvent at room temperature was similar to that of the n-hexane solution.

From

these electronic absorption spectra, MCD spectra, VPO measurements and temperature-dependent x-ray diffraction studies, it was clarified for (CnO)16-M that the dimer structure in hexane solution is closely related to those in the thermotropic mesophases.

IT 159254-45-2P, 2,3-Dicyano-5,6-bis(4-dodecyloxyphenyl)pyrazine

159254-47-4P 251480-26-9P, 2,3-Dicyano-5,6-bis(4-decyloxyphenyl)pyrazine 251480-27-0P 251480-28-1P

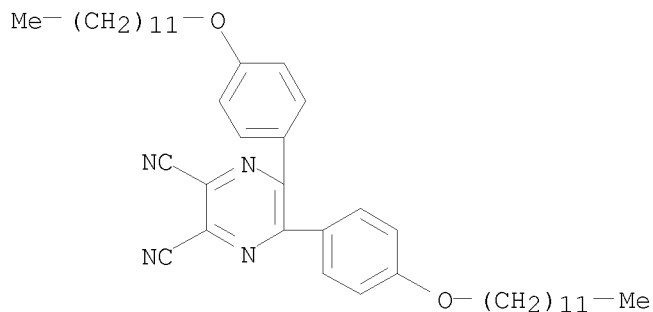
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT

(Reactant or reagent)

(preparation and reaction with diazabicycloundecene and copper chloride)

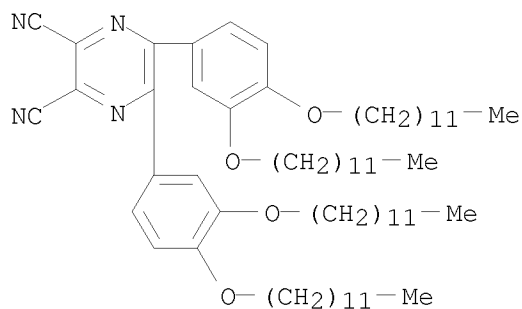
RN 159254-45-2 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(dodecyloxy)phenyl]- (CA INDEX NAME)



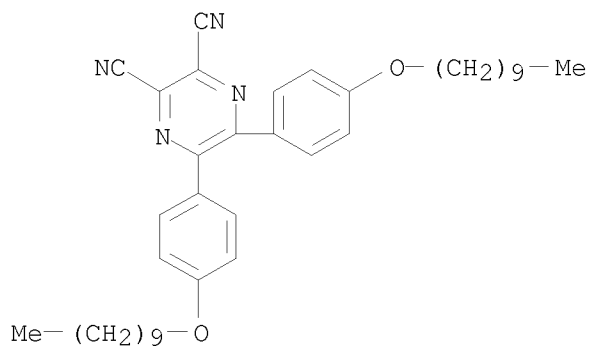
RN 159254-47-4 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[3,4-bis(dodecyloxy)phenyl]- (CA INDEX NAME)



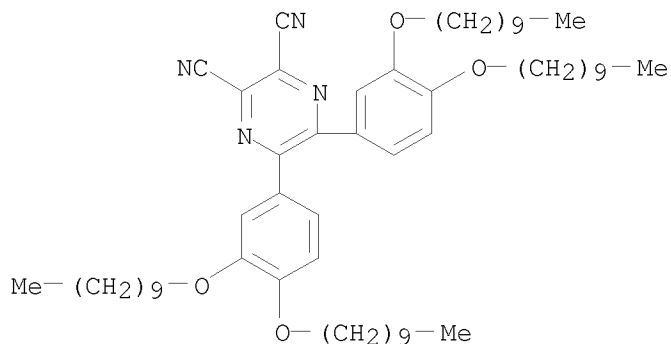
RN 251480-26-9 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(decyloxy)phenyl]- (CA INDEX NAME)

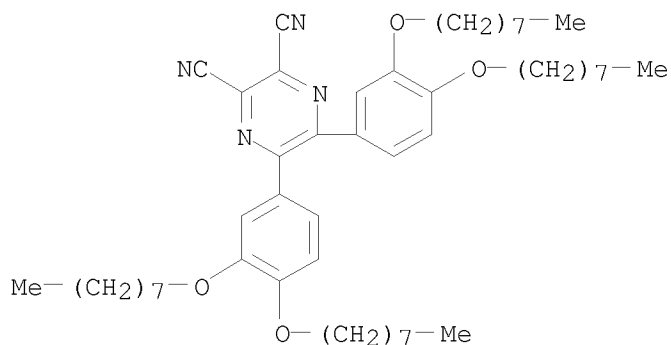


RN 251480-27-0 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[3,4-bis(decyloxy)phenyl]- (CA INDEX NAME)



RN 251480-28-1 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[3,4-bis(octyloxy)phenyl]- (CA INDEX NAME)



REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 74 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1999:497409 CAPLUS

DOCUMENT NUMBER: 131:257988

TITLE: Preparation and properties of aromatic polyethers containing acetylene groups in the backbone

AUTHOR(S): Rusanov, A. L.; Keshtov, M. L.; Sarkisyan, G. B.; Zuo, M.; Takeichi, T.

CORPORATE SOURCE: A. N. Nesmeyanov Institute of Organoelement Compounds, Russian Academy of Sciences, Moscow, 117813, Russia

SOURCE: Kobunshi Ronbunshu (1999), 56(7), 434-439

CODEN: KBRBA3; ISSN: 0386-2186

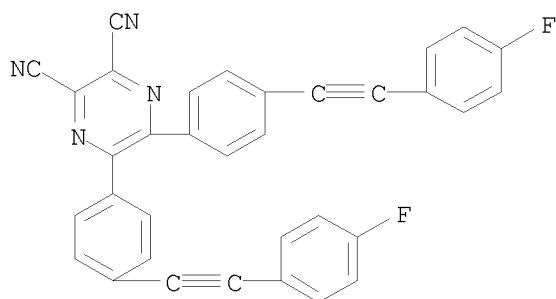
PUBLISHER: Kobunshi Gakkai

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

AB Novel difluoroarom. compds. containing acetylene groups were prepared The reactivity of the monomers in nucleophilic substitution was evaluated from the pos. charges on the carbon of C-F bonds calculated using the semiempirical PM3 method. There is a good correlation between the charge calculated and the chemical shifts in the ^{19}F NMR spectra. Reactions of the monomers with various bisphenols under the nucleophilic substitution reaction conditions gave aromatic polyethers. The glass transition temps. of the polyethers were in the range of 145-280°, and the temperature at 10% weight loss were in the range of 410-545°C in the air. DSC revealed that acetylene groups in the polyether backbone reacted to crosslink at ca. 350° to give solvent resistant polymers.

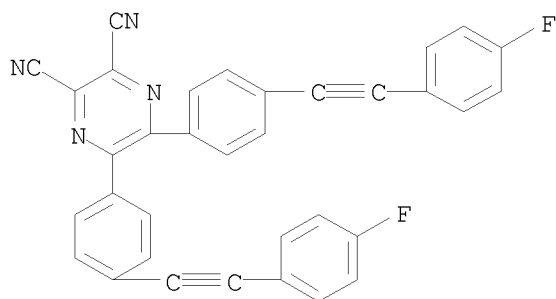
IT 194936-26-0P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (monomer; preparation and properties of aromatic polyethers containing
 acetylene
 groups in backbone)
 RN 194936-26-0 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[(4-fluorophenyl)ethynyl]phenyl]-
 (9CI) (CA INDEX NAME)



IT 244623-42-5P 244623-47-0P 244623-52-7P
 244623-57-2P 244623-61-8P 244623-65-2P
 244623-69-6P 244623-73-2P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (preparation and properties of aromatic polyethers containing acetylene
 groups in
 backbone)
 RN 244623-42-5 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[(4-fluorophenyl)ethynyl]phenyl]-,
 polymer with 4,4'-(1-methylethylidene)bis[phenol] (9CI) (CA INDEX NAME)

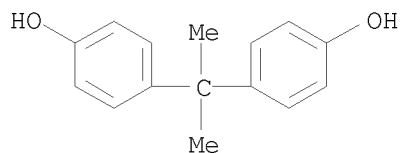
CM 1

CRN 194936-26-0
 CMF C34 H16 F2 N4



CM 2

CRN 80-05-7
 CMF C15 H16 O2



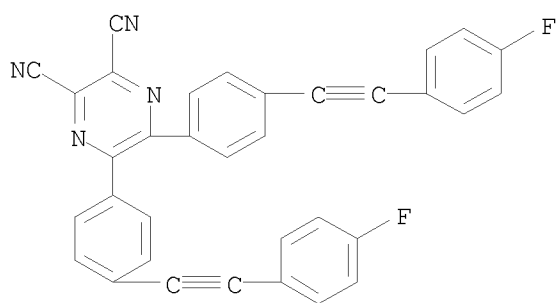
RN 244623-47-0 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[(4-fluorophenyl)ethynyl]phenyl]-, polymer with 4,4'-(9H-fluoren-9-ylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 194936-26-0

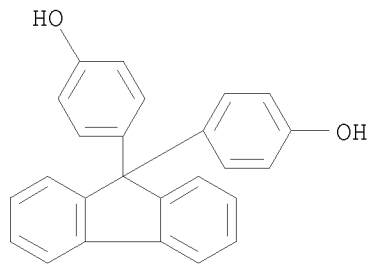
CMF C34 H16 F2 N4



CM 2

CRN 3236-71-3

CMF C25 H18 O2



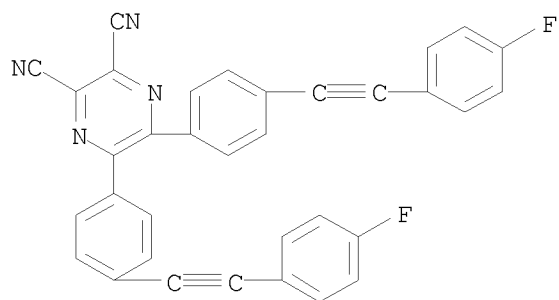
RN 244623-52-7 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[(4-fluorophenyl)ethynyl]phenyl]-, polymer with 3,3-bis(4-hydroxyphenyl)-1(3H)-isobenzofuranone (9CI) (CA INDEX NAME)

CM 1

CRN 194936-26-0

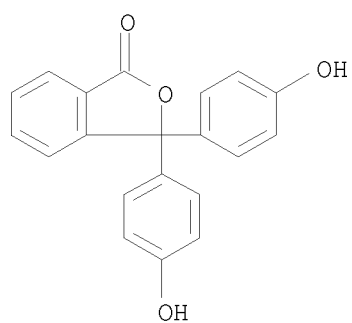
CMF C34 H16 F2 N4



CM 2

CRN 77-09-8

CMF C20 H14 O4



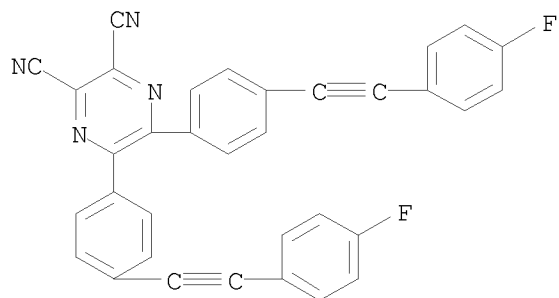
RN 244623-57-2 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[(4-fluorophenyl)ethynyl]phenyl]-, polymer with 4,4'-(1-phenylethylidene)bis[phenol] (9CI) (CA INDEX NAME)

CM 1

CRN 194936-26-0

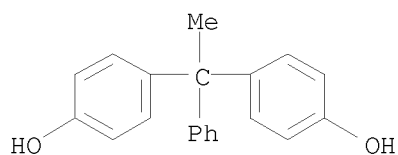
CMF C34 H16 F2 N4



CM 2

CRN 1571-75-1

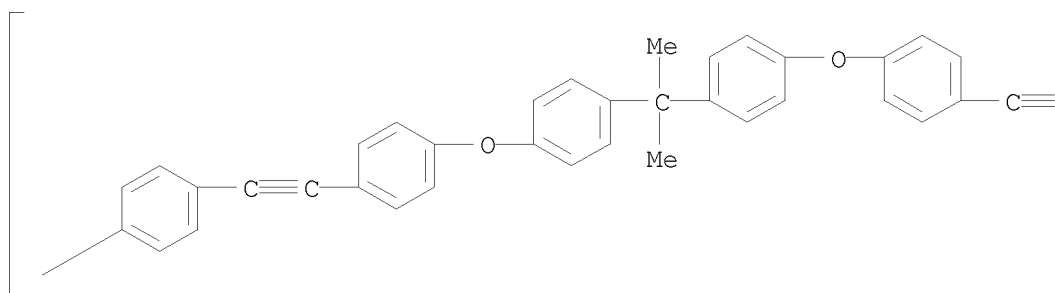
CMF C20 H18 O2



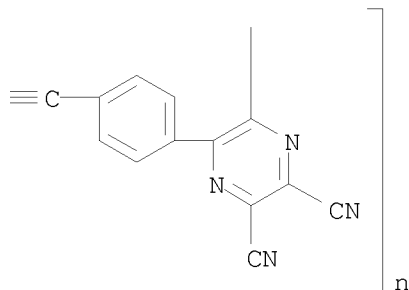
RN 244623-61-8 CAPLUS

CN Poly[(5,6-dicyano-2,3-pyrazinediyl)-1,4-phenylene-1,2-ethynediyl-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenyleneoxy-1,4-phenylene-1,2-ethynediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

PAGE 1-A

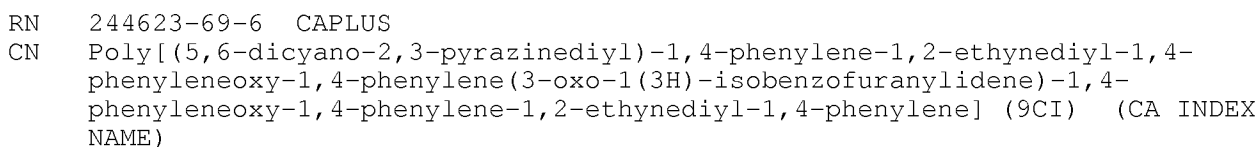


PAGE 1-B



RN 244623-65-2 CAPLUS

CN Poly[(5,6-dicyano-2,3-pyrazinediyl)-1,4-phenylene-1,2-ethynediyl-1,4-phenyleneoxy-1,4-phenylene-9H-fluoren-9-ylidene-1,4-phenyleneoxy-1,4-phenylene-1,2-ethynediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

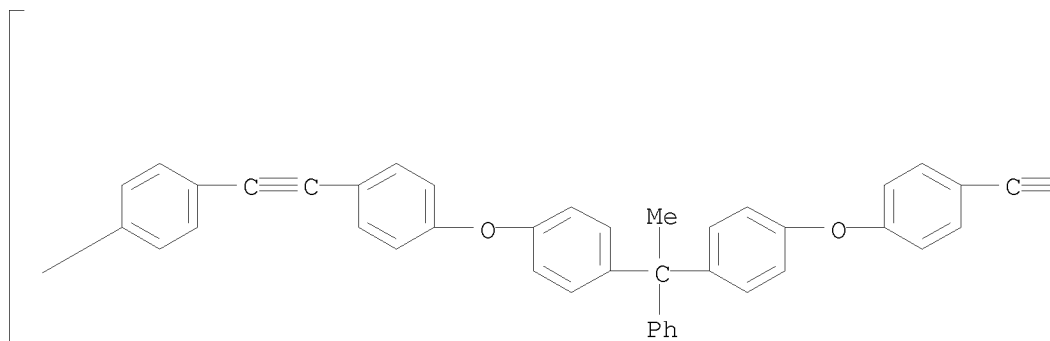


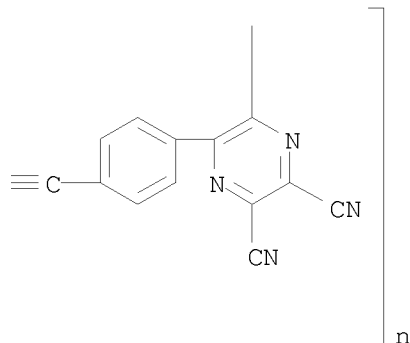
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

RN	244623-73-2	CAPLUS
CN	Poly[(5,6-dicyano-2,3-pyrazinediyl)-1,4-phenylene-1,2-ethynediyl-1,4-phenyleneoxy-1,4-phenylene(1-phenylethylidene)-1,4-phenyleneoxy-1,4-phenylene-1,2-ethynediyl-1,4-phenylene] (9CI) (CA INDEX NAME)	

PAGE 1-A





IT 101579-12-8

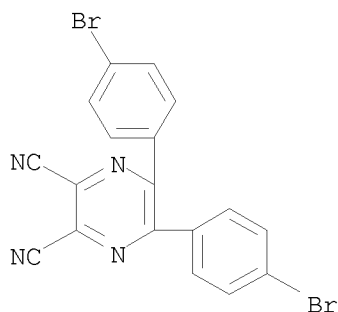
RL: RCT (Reactant); RACT (Reactant or reagent)

(starting material; preparation and properties of aromatic polyethers containing

acetylene groups in backbone)

RN 101579-12-8 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-bromophenyl)- (CA INDEX NAME)



L4 ANSWER 75 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1999:437827 CAPLUS

DOCUMENT NUMBER: 131:164543

TITLE: Tetrakis(selenodiazole)porphyrazines. 1: tetrakis(selenodiazole)porphyrazine and its Mg(II) and Cu(II) derivatives. Evidence for their conversion to tetrakis(pyrazino)porphyrazines through octaaminoporphyrazines

AUTHOR(S): Bauer, Elvira M.; Ercolani, Claudio; Galli, Paola; Popkova, Irina A.; Stuzhin, Pavel A.

CORPORATE SOURCE: Dipartimento di Chimica, Universita degli Studi di Roma "La Sapienza", Rome, I-00185, Italy

SOURCE: Journal of Porphyrins and Phthalocyanines (1999), 3(5), 371-379

CODEN: JPPHFZ; ISSN: 1088-4246

PUBLISHER: John Wiley & Sons Ltd.

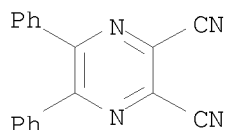
DOCUMENT TYPE: Journal

LANGUAGE: English

AB The new phthalocyanine-like macrocycle tetrakis(selenodiazole)porphyrazine, TSeDPzH₂, and its Mg(II) and Cu(II) complexes were prepared and their general, spectroscopic (IR, UV-visible), and magnetic properties studied. The peripheral selenodiazole rings of the TSeDPz skeleton can be opened by

the action of H₂S, with release of the Se atoms and formation of a new macrocycle, octaaminoporphyrazine, which is easily converted into tetrakis(pyrazino)porphyrazine derivs.

IT 52197-23-6P, 2,3-Dicyano-5,6-diphenylpyrazine
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and magnesium template cyclotetramerization)
 RN 52197-23-6 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)

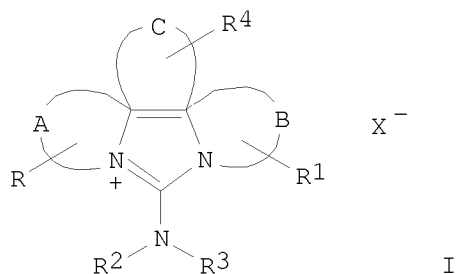


REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 76 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1999:130421 CAPLUS
 DOCUMENT NUMBER: 130:196653
 TITLE: Imidazolium cations, processes for their preparation, and uses therefor
 INVENTOR(S): Donovan, Robert J.; Morgan, Robert J.
 PATENT ASSIGNEE(S): The Rockefeller University, USA
 SOURCE: U.S., 33 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5874587	A	19990223	US 1996-673687	19960625
US 5969150	A	19991019	US 1998-124546	19980729
US 6087510	A	20000711	US 1999-247471	19990208
US 6187928	B1	20010213	US 2000-520202	20000307
PRIORITY APPLN. INFO.:			US 1996-673687	A2 19960625
OTHER SOURCE(S):		CASREACT 130:196653; MARPAT 130:196653		

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AB Imidazolium compds. I [A represents the atomic group necessary to form a heteroarom. ring, which may be optionally substituted by one or more R substituents selected from the group consisting of aryl, heteroaryl, lower

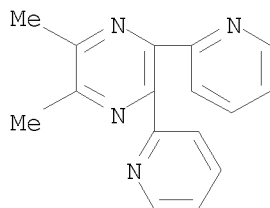
alkyl, hydroxy, halide, or carboxy substituents; B is an optional substituent which represents the atomic group necessary to form a heteroarom. ring or a double or triple carbon-nitrogen bond, which may optionally be substituted by one or more R1 substituents selected from the group consisting of aryl, heteroaryl, lower alkyl, hydroxy, halide, or carboxy substituents; C is an optional substituent which represents the atomic group necessary to form an aromatic or heteroarom. ring, which may optionally be substituted by one or more R4 substituents selected from the group consisting of aryl, heteroaryl, lower alkyl, hydroxy, halide, or carboxy substituents; R2 and R3 are each independently a lower alkyl or aryl group, or together with the nitrogen atom to which they are attached, form a heterocyclic ring having from 5 to 7 members, which may optionally contain a sulfur, oxygen, silicon, selenium or an addnl. nitrogen atom; X is an anion], useful in a variety of industrial and medical applications (no data) were prepared E.g. treating 2-(2-pyridinyl)-4-quinolinecarboxylic acid with SOCl2, then with 4-morpholinecarboxaldehyde, gave fluorescent 5-carboxy-12-(4-morpholinyl)pyrido[1',2':3,4]imidazo[1,5-a]quinolin-11-ium perchlorate.

IT 89684-66-2

RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclization; preparation and fluorescence of imidazolium compds.)

RN 89684-66-2 CAPLUS

CN Pyrazine, 2,3-dimethyl-5,6-di-2-pyridinyl- (CA INDEX NAME)

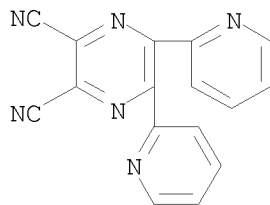


IT 118553-90-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(cyclization; preparation and fluorescence of imidazolium compds.)

RN 118553-90-5 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-di-2-pyridinyl- (CA INDEX NAME)



REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 77 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1998:440027 CAPLUS

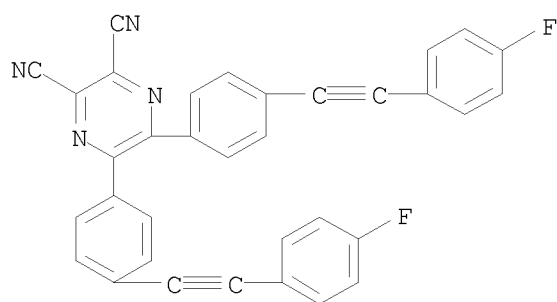
DOCUMENT NUMBER: 129:122882

TITLE: Evaluation of the reactivity of new activated difluoroaromatic compounds

AUTHOR(S): Rusanov, A. L.; Keshtov, M. L.; Keshtova, S. V.

CORPORATE SOURCE: A. N. Nesmeyanov Institute of Organoelement Compounds, Russian Academy of Sciences, Moscow, 117813, Russia

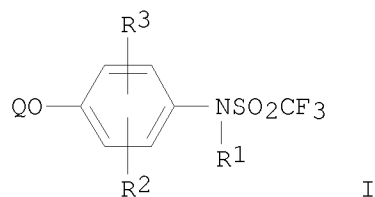
SOURCE: Russian Chemical Bulletin (Translation of Izvestiya Akademii Nauk, Seriya Khimicheskaya) (1998), 47(4), 602-603
 CODEN: RCBUEY; ISSN: 1066-5285
 PUBLISHER: Consultants Bureau
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB To evaluate the reactivity of new difluoroarom. compds. in nucleophilic substitution, the pos. charges on carbon atoms of C-F bonds were calculated using the quantum-chemical semiempirical PM3 method. A correlation between the charges calculated and the chemical shifts in the ¹⁹F NMR spectra was established.
 IT 194936-26-0
 RL: PRP (Properties)
 (reactivity of)
 RN 194936-26-0 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[(4-fluorophenyl)ethynyl]phenyl]-
 (9CI) (CA INDEX NAME)



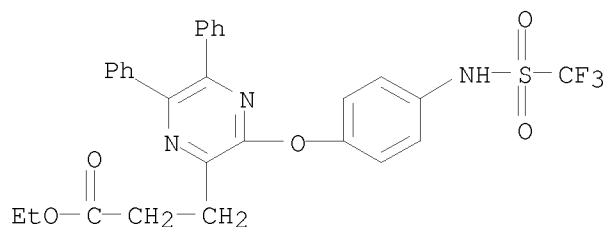
REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 78 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1998:38682 CAPLUS
 DOCUMENT NUMBER: 128:167414
 TITLE: Preparation of thiazolyloxyphenylmethanesulfonamides as herbicides
 INVENTOR(S): Sato, Kazuo; Kudo, Noriaki; Honma, Toyokuni; Isarai, Kiyoshi; Kadotani, Junji
 PATENT ASSIGNEE(S): Sankyo Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 26 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 10007657	A	19980113	JP 1996-158177	19960619
PRIORITY APPLN. INFO.:			JP 1996-158177	19960619
OTHER SOURCE(S):	MARPAT	128:167414		
GI				



- AB Sulfonamides I (R1 = H, C2-6 alkanoyl, benzoyl; R2, R3 = H, halo, NO2, cyano, (substituted) lower alkyl, (substituted) lower alkoxy, etc.; R2R3 may form Ph or naphthalene; Q = (substituted) pyrazinyl, (substituted) 4-pyrimidinyl, (substituted) oxazolyl, (substituted) thiazolyl, (substituted) quinoxalyl, (substituted) quinazolyl, etc.; if Q = thiazolyl and R2 = R3, then R2 = R3 ≠ H) are prepared 2-(4-Amino-3-methoxycarbonylphenoxy)-4-chloro-5-difluoromethylthiazole was amidated with F3CSO3H in the presence of Et3N in CH2Cl2 under ice-cooling for 30 min, decomposed with NaOH in THF-H2O at room temperature for 1 h to give 86% I
- (R1 = H, R2 = 2-CO2Me, R3 = H, Q = 4-chloro-5-difluoromethyl-2-thiazolyl) (II). II at 5 g/a preemergence controlled 91-100% Echinochloa oryzicola and broadleaf weeds, 71-90% Scirpus juncooides, and 31-50% Cyperus serotinus growth without damaging rice plants.
- IT 202752-42-9
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
(preparation of phenylmethanesulfonamides as herbicides)
- RN 202752-42-9 CAPLUS
- CN Pyrazinepropanoic acid, 5,6-diphenyl-3-[4-[[trifluoromethyl)sulfonyl]amino]phenoxy]-, ethyl ester (9CI) (CA INDEX NAME)



L4 ANSWER 79 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1997:749366 CAPLUS

DOCUMENT NUMBER: 128:48077

TITLE: Synthesis of pyrazinoporphyrazine derivatives functionalized with tetrathiafulvalene (TTF) units: x-ray crystal structures of two related TTF cyclophanes and two bis(1,3-dithiole-2-thione) intermediates

AUTHOR(S): Wang, Changsheng; Bryce, Martin R.; Batsanov, Andrei S.; Howard, Judith A. K.

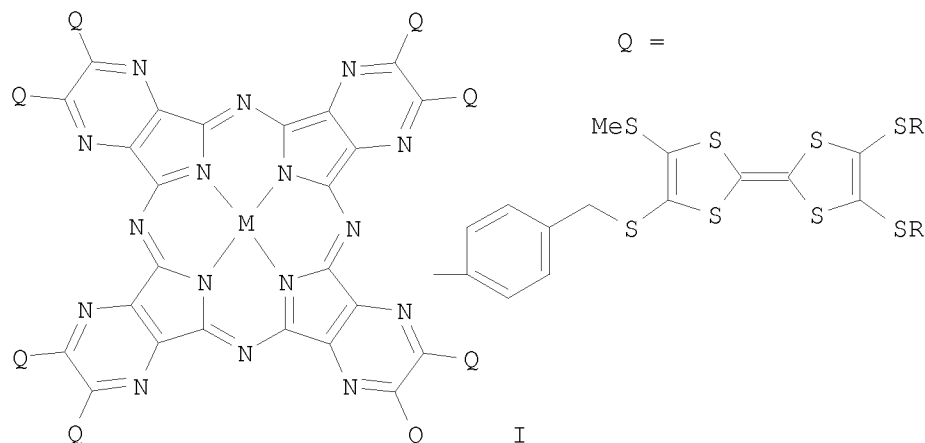
CORPORATE SOURCE: Department of Chemistry, University of Durham, Durham, DH1 3LE, UK

SOURCE: Chemistry--A European Journal (1997), 3(10), 1679-1690
CODEN: CEUJED; ISSN: 0947-6539

PUBLISHER: Wiley-VCH Verlag GmbH

DOCUMENT TYPE: Journal

LANGUAGE: English
GI

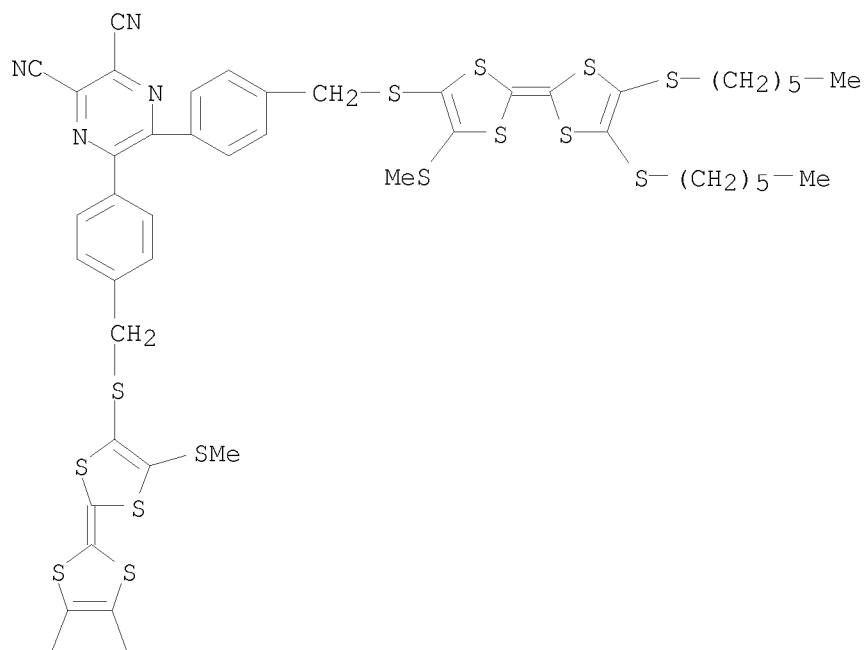


AB The pyrazinoporphyrazine system (I) (M = 2H, Zn, Cu; R = hexyl) has been synthesized by tetramerization of 2,3-dicyanopyrazine monomer unit. The structure of I has been established by ¹H NMR spectroscopy, UV/Vis spectrophotometry, MALDI-TOF mass spectrometry, cyclic voltammetry and differential pulse voltammetry. The electrochem. redox behavior of I is strongly solvent dependent. The expected two-stage oxidation of the tetrathiafulvalene (TTF) units of I was observed in a range of solvents; in addition, oxidation and reduction of the pyrazinoporphyrazine core of the metal-free derivative was detected in benzonitrile. On excitation of I in the Q-band region no fluorescence was observed, which is presumably the consequence of intramol. charge transfer between the TTF moieties and the excited state of the central porphyrane. Mol. modeling studies on I (M = 2H, Zn) are reported. During the course of this work, novel TTF macrocycles were synthesized; their X-ray crystal structures reveal severely bent TTF units, the conformations of which are discussed in detail. The X-ray crystal structures of the bis(1,3-dithiole) systems have also been determined

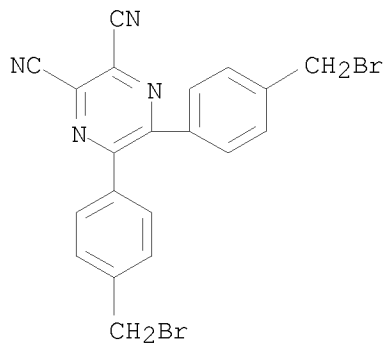
IT 199734-79-7P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(synthesis of pyrazinoporphyrazine derivs. functionalized with tetrathiafulvalene (TTF) and x-ray crystal structures of two related TTF cyclophanes and two bis(1,3-dithiole-2-thione) intermediates)

RN 199734-79-7 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[[[2-[4,5-bis(hexylthio)-1,3-dithiol-2-ylidene]-5-(methylthio)-1,3-dithiol-4-yl]thio]methyl]phenyl]- (CA INDEX NAME)

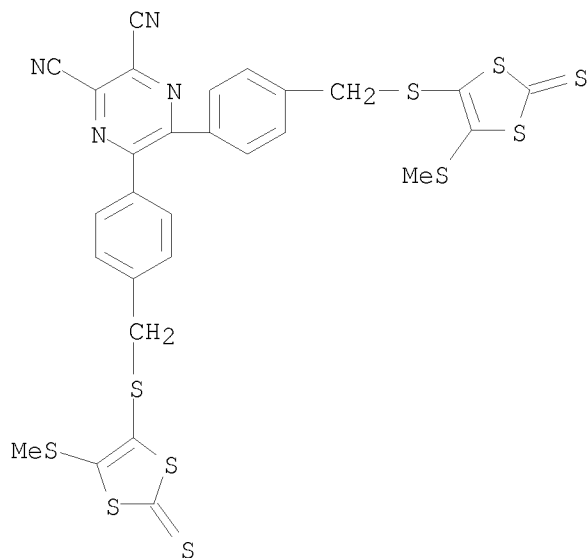


IT 199734-75-3P 199734-76-4P 199734-78-6P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (synthesis of pyrazinoporphyrazine derivs. functionalized with
 tetrathiafulvalene (TTF) and x-ray crystal structures of two related
 TTF cyclophanes and two bis(1,3-dithiole-2-thione) intermediates)
 RN 199734-75-3 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(bromomethyl)phenyl]- (CA INDEX
 NAME)



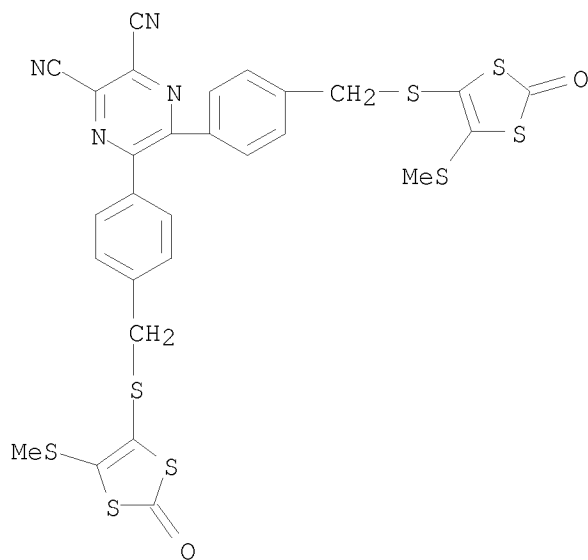
RN 199734-76-4 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[[[5-(methylthio)-2-thioxo-1,3-

dithiol-4-yl]thio]methyl]phenyl]- (CA INDEX NAME)



RN 199734-78-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[[[5-(methylthio)-2-oxo-1,3-dithiol-4-yl]thio]methyl]phenyl]- (CA INDEX NAME)



REFERENCE COUNT: 88 THERE ARE 88 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 80 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

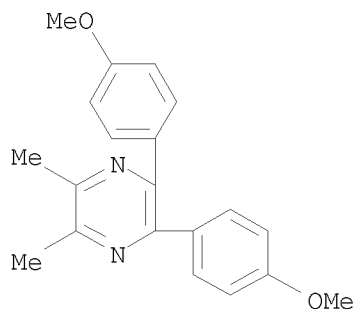
ACCESSION NUMBER: 1997:706910 CAPLUS

DOCUMENT NUMBER: 128:30196

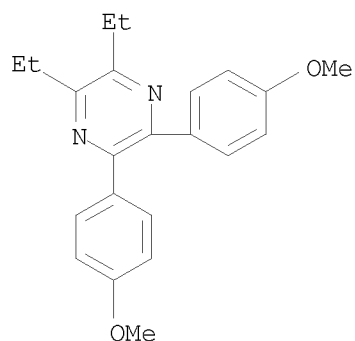
TITLE: Anti-Platelet aggregation activity of some pyrazines

AUTHOR(S): Ohta, Akihiro; Takahashi, Hiromitsu; Miyata, Naomi;
Hirono, Hiroyuki; Nishio, Toyotaka; Uchino, Etsuo;
Yamada, Kenji; Aoyagi, Yutaka; Suwabe, Yasushi;

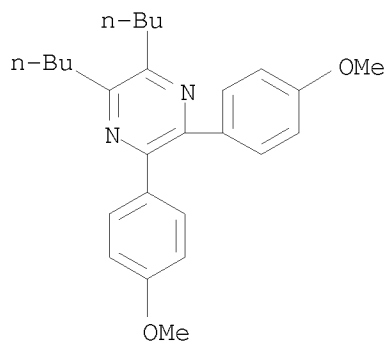
CORPORATE SOURCE: Fujitake, Masayuki; Suzuki, Takahiro; Okamoto, Kazuo
 Tokyo University of Pharmacy and Life Science,
 Hachioji, 192-03, Japan
 SOURCE: Biological & Pharmaceutical Bulletin (1997), 20(10),
 1076-1081
 CODEN: BPBLEO; ISSN: 0918-6158
 PUBLISHER: Pharmaceutical Society of Japan
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB This report describes the anti-platelet aggregation activity of 48
 pyrazines. Among alkyl- and arylpyrazines tested, 2,3-diphenylpyrazines
 showed the strongest anti-platelet aggregation activity. Then, various
 substituents were introduced into the Ph groups, and the
 2,3-bis(p-methoxyphenyl)pyrazine derivs. were consequently found to
 possess considerably strong inhibitory activity.
 IT 106615-37-6P 199783-14-7P 199783-16-9P
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological
 study, unclassified); PRP (Properties); SPN (Synthetic preparation); THU
 (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES
 (Uses)
 (antiplatelet aggregation activity of pyrazines)
 RN 106615-37-6 CAPLUS
 CN Pyrazine, 2,3-bis(4-methoxyphenyl)-5,6-dimethyl- (CA INDEX NAME)



RN 199783-14-7 CAPLUS
 CN Pyrazine, 2,3-diethyl-5,6-bis(4-methoxyphenyl)- (CA INDEX NAME)

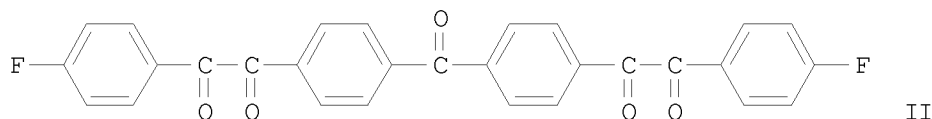
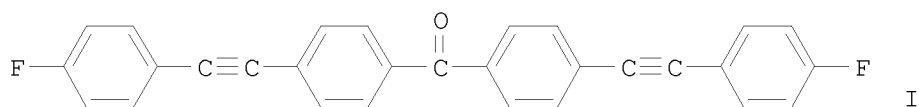


RN 199783-16-9 CAPLUS
 CN Pyrazine, 2,3-dibutyl-5,6-bis(4-methoxyphenyl)- (CA INDEX NAME)

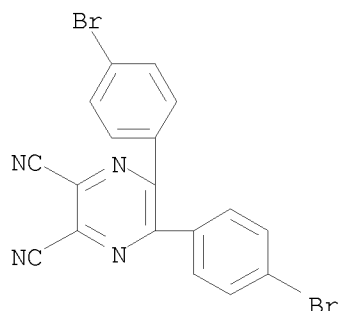


REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

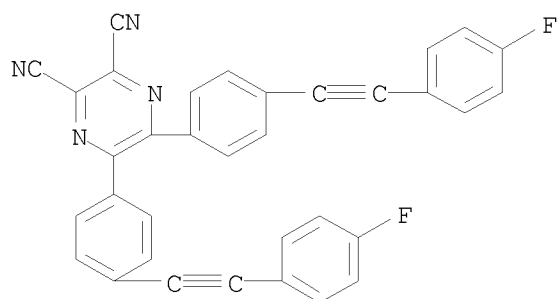
L4 ANSWER 81 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1997:525292 CAPLUS
 DOCUMENT NUMBER: 127:220437
 TITLE: New activated bisfluoroaromatic compounds
 AUTHOR(S): Rusanov, A. L.; Keshtov, M. L.; Belomoina, N. M.; Mikitaev, A. K.; Sarkisyan, G. B.; Keshtova, S. V.
 CORPORATE SOURCE: A. N. Nesmeyanov Institute of Organoelement Compounds, Russian Academy of Sciences, Moscow, 117813, Russia
 SOURCE: Russian Chemical Bulletin (Translation of Izvestiya Akademii Nauk, Seriya Khimicheskaya) (1997), 46(4), 777-779
 CODEN: RCBUEY; ISSN: 1066-5285
 PUBLISHER: Consultants Bureau
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 GI



AB Bis(p-fluorophenylethynyl) derivs. were obtained by the reaction of bisbromoarom. compds. with p-fluorophenylacetylene in the presence of a Pd catalyst. Subsequent oxidation of these products using an I2-DMSO system led to new bis(p-fluorophenylglyoxalyl)ketones, α-diketones, and heterocyclic compds. For example, the coupling of (4-fluorophenyl)acetylene with 4,4'-dibromobenzophenone gave ketone I. Further oxidation of I gave the bisglyoxal II.
 IT 101579-12-8
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of bisfluoroarom. compds.)
 RN 101579-12-8 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-bromophenyl)- (CA INDEX NAME)



IT 194936-26-0P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of bisfluoroarom. compds.)
 RN 194936-26-0 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[(4-fluorophenyl)ethynyl]phenyl]-
 (9CI) (CA INDEX NAME)



REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 82 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1997:324032 CAPLUS
 DOCUMENT NUMBER: 126:299542
 TITLE: Blue-emitting materials and electroluminescent devices containing these materials
 INVENTOR(S): Dodabalapur, Ananth; Strukelj, Marko; Jordan, Rebecca
 PATENT ASSIGNEE(S): Lucent Technologies Inc., USA
 SOURCE: Eur. Pat. Appl., 19 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 763965	A2	19970319	EP 1996-306381	19960903
EP 763965	A3	19970611		
R: DE, FR, GB				
US 5904994	A	19990518	US 1996-673864	19960702
JP 09188876	A	19970722	JP 1996-242815	19960913
JP 3096642	B2	20001010		
JP 2000208274	A	20000728	JP 2000-16564	19960913
PRIORITY APPLN. INFO.:			US 1995-3721P	P 19950913
			JP 1996-242815	A3 19960913

OTHER SOURCE(S): MARPAT 126:299542

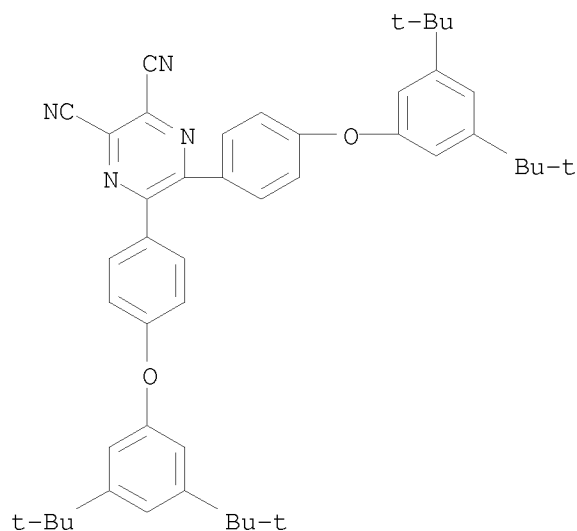
AB Electroluminescent devices emitting at 400-650 nm are described that comprise a glass substrate, an anode, a layer of a hole transporting materials, a layer of blue-emitting material having a nonpolymeric mol. structure that comprises a five or six-membered heterocyclic moiety selected from the groups consisting of oxazole, imidazole, quinoline, and pyrazine with ≥ 3 organic substituents pendant to them and with an average crystal grain size of .ltorsim.1000 Å, a layer of an electron-transporting material, and a cathode. The thickness of the layer of the blue-emitting material is preferably less than 600 Å. The hole-transporting layer may be a diamine, especially bis(triphenyl)amine, and the electron transporter may be Alq. The blue-emitting materials are also claimed; a preferred material is 2-naphthyl-4,5-(4-methoxyphenyl)oxazole. The blue-emitting materials can be formed into films with advantageous properties.

IT 189155-56-4P

RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(blue-emitting heterocyclic materials and electroluminescent devices containing them)

RN 189155-56-4 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[3,5-bis(1,1-dimethylethyl)phenoxy]phenyl]- (CA INDEX NAME)



L4 ANSWER 83 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1997:102094 CAPLUS

DOCUMENT NUMBER: 126:199575

TITLE: Tricyclic substituted hexahydrobenz[e]isoindole
alpha-1 adrenergic antagonists

INVENTOR(S): Meyer, Michael D.; Altenbach, Robert J.; Basha, Fatima
Z.; Carroll, William A.; Drizin, Irene; Elmore, Steven
W.; Kerwin, James F., Jr.; Lebold, Suzanne A.; Lee,
Edmund L.; Sippy, Kevin B.; Tietje, Karin R.; Wendt,
Michael D.

PATENT ASSIGNEE(S): Abbott Laboratories, USA

SOURCE: U.S., 73 pp., Cont.-in-part of U.S. Ser. No. 379,414,
abandoned.

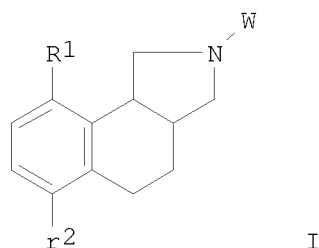
CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5597823	A	19970128	US 1995-463528	19950605
IL 116405	A	20010913	IL 1995-116405	19951215
CA 2211212	A1	19960801	CA 1996-2211212	19960111
WO 9622992	A1	19960801	WO 1996-US72	19960111
W: AU, CA, JP, KR, MX				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9647457	A	19960814	AU 1996-47457	19960111
AU 705283	B2	19990520		
EP 808318	A1	19971126	EP 1996-903340	19960111
EP 808318	B1	20000628		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE				
AT 194141	T	20000715	AT 1996-903340	19960111
ES 2149451	T3	20001101	ES 1996-903340	19960111
PT 808318	T	20001229	PT 1996-903340	19960111
JP 2001504797	T	20010410	JP 1996-522867	19960111
GR 3034485	T3	20001229	GR 2000-402174	20000926
PRIORITY APPLN. INFO.:			US 1995-379414	B2 19950127
			US 1995-463528	A 19950605
			WO 1996-US72	W 19960111

OTHER SOURCE(S): MARPAT 126:199575
 GI

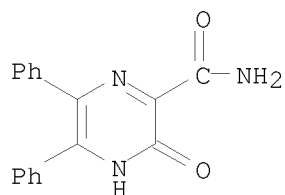


AB I (W = tricyclic heterocyclic ring system, e. g. pyrazinothienopyrimidinediones, pyridofuopyrimidinediones, pyrazinothienopyrimidinediones; n = 2-6; R1 and R2 = H, alkoxy, hydroxy, alkyl, halo, carboxy, alkoxycarbonyl) and their pharmaceutically acceptable salts were prepared I are α -1 adrenergic antagonists and useful in the treatment of BPH (benign prostrate hyperplasia). α -1 Antagonist compns. and a method for antagonizing α -1 receptors and treating BPH are also disclosed.

IT 34121-79-4
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (for preparation of tricyclic substituted hexahydrobenzisoindoles as alpha-1 adrenergic antagonists)

RN 34121-79-4 CAPLUS

CN Pyrazinecarboxamide, 3,4-dihydro-3-oxo-5,6-diphenyl- (9CI) (CA INDEX NAME)



L4 ANSWER 84 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1996:653177 CAPLUS

DOCUMENT NUMBER: 125:288835

TITLE: Imino compound and heat-sensitive recording material capable of providing durable images using same

INVENTOR(S): Matsumoto, Mansuke; Sasaki, Nobuaki; Sawano, Bunji

PATENT ASSIGNEE(S): Mitsui Toatsu Chemicals, Japan; Yamamoto Chemicals Inc

SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

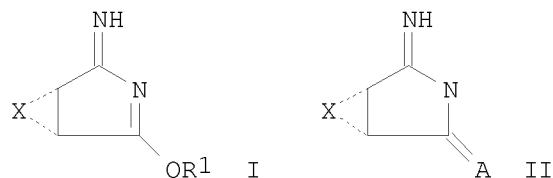
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08199081	A	19960806	JP 1995-71329	19950329
PRIORITY APPLN. INFO.:			JP 1995-71329	A 19950329
			JP 1994-287864	19941122

GI



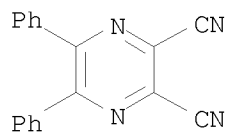
AB The imino compound is represented by I (X = aromatic ring; R1 = C1-8 alkyl). The imino compound is represented by II [X = aromatic ring; A = :NR2, -(OR2,OR3), -O-R5-O-; R2, R3, R4 = C1-8 alkyl; R5 = C1-3 alkylene]. The material comprises at least one of the above imino compds. and a carbonyl compound with H at α -position. The images show excellent stability.

IT 52197-23-6P, 2,3-Dicyano-5,6-diphenylpyrazine

RL: IMF (Industrial manufacture); PREP (Preparation)
(preparation of imino compound)

RN 52197-23-6 CAPLUS

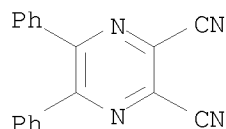
CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)



L4 ANSWER 85 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1996:633082 CAPLUS
DOCUMENT NUMBER: 125:315223
TITLE: Substituted tetra-2,3-pyrazinoporphyrazines. Part II.
Bis(tri-n-hexylsiloxy)silicon derivatives
AUTHOR(S): Kudrevich, Svetlana V.; van Lier, Johan E.
CORPORATE SOURCE: Fac. Med., Univ. Sherbrooke, Sherbrooke, QC, J1H 5N4,
Can.
SOURCE: Canadian Journal of Chemistry (1996), 74(9), 1718-1723
CODEN: CJCHAG; ISSN: 0008-4042
PUBLISHER: National Research Council of Canada
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Dichlorosilicon complexes of substituted tetra-2,3-pyrazinoporphyrazines were obtained via condensation of 2,3-dicyanopyrazine, 2,3-dicyano-5,6-diphenylpyrazine, 2,3-dicyanoquinoxaline, 2,3-dicyano-benzo[f]quinoxaline, and 2,3-dicyano-dibenzo[f,h]quinoxaline with silicon tetrachloride in the presence of urea, quinoline, and tri-n-butylamine. Hydrolysis of the Si-Cl bond in concentrated H₂SO₄, followed by treatment with 0.01N NaOH and aqueous NH₃, afforded the corresponding dihydroxides, which were converted to the bis(tri-n-hexylsiloxy)silicon derivs. via reaction with tri(n-hexyl)chlorosilane in 3-picoline (2,4,6-collidine) in the presence of tri-n-butylamine. The axial tri-n-hexylsiloxy substituents at the central silicon atom prevent aggregation in organic solvents, permitting detailed studies on the effects of structural modification on the electronic spectra of tetraazaphthalocyanines. The authors' data show that each benzo ring addition, angularly condensed to the tetra-2,3-quinoxalinoporphyrazine, induces a hypsochromic shift (.apprx.10-15 nm) of the main absorption maximum
IT 52197-23-6, 2,3-Dicyano-5,6-diphenylpyrazine
RL: RCT (Reactant); RACT (Reactant or reagent)
(for condensation preparation of silicon tetrapyrazinoporphyrazinate complexes)
RN 52197-23-6 CAPLUS
CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)



L4 ANSWER 86 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1996:580282 CAPLUS
DOCUMENT NUMBER: 125:221858
TITLE: Preparation of tricyclic substituted benz[e]isoindoles as α 1 adrenergic antagonists
INVENTOR(S): Meyer, Michael D.; Altenbach, Robert J.; Basha, Fatima Z.; Carroll, William A.; Drizin, Irene; Kerwin, James F., Jr.; Lebold, Suzanne A.; Lee, Edmund L.; Elmore, Steven W.; et al.
PATENT ASSIGNEE(S): Abbott Laboratories, USA
SOURCE: PCT Int. Appl., 180 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9622992	A1	19960801	WO 1996-US72	19960111
W: AU, CA, JP, KR, MX				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5597823	A	19970128	US 1995-463528	19950605
AU 9647457	A	19960814	AU 1996-47457	19960111
AU 705283	B2	19990520		
EP 808318	A1	19971126	EP 1996-903340	19960111
EP 808318	B1	20000628		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE				
AT 194141	T	20000715	AT 1996-903340	19960111
JP 2001504797	T	20010410	JP 1996-522867	19960111
GR 3034485	T3	20001229	GR 2000-402174	20000926
PRIORITY APPLN. INFO.:			US 1995-379414	A 19950127
			US 1995-463528	A 19950605
			WO 1996-US72	W 19960111
OTHER SOURCE(S):		MARPAT 125:221858		
GI				

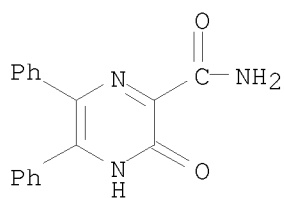
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The title compds. [I; R1, R2 = H, alkoxy, OH, etc.; W = tricyclic heterocyclic ring system; n = 2-6] and their salts, useful in the treatment of benign prostatic hypertrophy (BPH), were prepared. Thus, reaction of urea II with benz[e]isoindole III in the presence of (iPr)₂NEt in DMSO afforded the desired product cis-IV.HCl which showed pA₂ of 8.37 for inhibition of phenylephrine(PE)-induced contraction of rat vas.

IT 34121-79-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of tricyclic substituted benz[e]isoindoles as α 1 adrenergic antagonists)

RN 34121-79-4 CAPLUS

CN Pyrazinecarboxamide, 3,4-dihydro-3-oxo-5,6-diphenyl- (9CI) (CA INDEX NAME)



L4 ANSWER 87 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1996:469647 CAPLUS

DOCUMENT NUMBER: 125:142691

TITLE: Syntheses of Trisulfonated Phthalocyanines and Their Derivatives Using Boron(III) Subphthalocyanines as Intermediates

AUTHOR(S): Kudrevich, Svetlana V.; Gilbert, Sandra; van Lier, Johan E.

CORPORATE SOURCE: Faculty of Medicine, Universite de Sherbrooke, Sherbrooke, QC, J1H 5N4, Can.

SOURCE: Journal of Organic Chemistry (1996), 61(17), 5706-5707
CODEN: JOCEAH; ISSN: 0022-3263

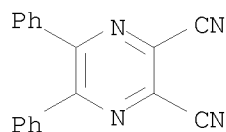
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

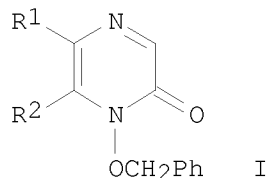
AB Water-soluble, unsym. trisulfonated phthalocyanines I [X = CH, R = CMe₃, R₁ = H; RR₁ = CH:CHC(CMe₃):CH; X = N, R = R₁ = Ph] were obtained as single products in the ring expansion of trisulfosubphthalocyanine II with diiminoindolines. The reaction proceeds at relatively low temperature with preparative yields. II was prepared by trimerization of chlorosulfonylphthalonitrile and hydrolysis.

IT 52197-23-6, 2,3-Dicyano-5,6-diphenylpyrazine
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of trisulfonated Phthalocyanines from Boron(III) subphthalocyanines)

RN 52197-23-6 CAPLUS
CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)



L4 ANSWER 88 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1996:282693 CAPLUS
DOCUMENT NUMBER: 125:58442
TITLE: N-Hydroxyamide-containing heterocycles. Part 7. Preparation and photochemical behavior of 1-benzyloxy-2(1H)-pyrazinones
AUTHOR(S): Ohkanda, Junko; Kumasaka, Toshihiko; Takasu, Aki; Hasegawa, Tadashi; Katoh, Akira
CORPORATE SOURCE: Department of Industrial chemistry, Seikei University, Tokyo, 180, Japan
SOURCE: Heterocycles (1996), 43(4), 883-889
CODEN: HTCYAM; ISSN: 0385-5414
PUBLISHER: Japan Institute of Heterocyclic Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 125:58442
GI

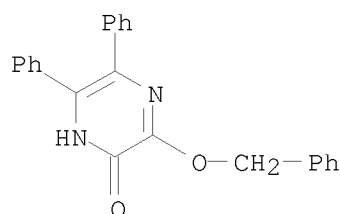


AB Synthesis of 1-benzyloxy-2(1H)-pyrazinones I [R1 = H, Me, R2 = H; R1 = R2 = Me, Ph; R1R2 = (CH2)4] having substituents at C-5 and C-6 positions and their photochem. behavior have been studied. Upon irradiation, I underwent N-O bond cleavage in high quantum yields. The rearrangement of the benzyloxy group to the C-3 position of the ring and [2+2] cycloaddn. were also observed

IT 177938-63-5P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation and photochem. reaction of benzyloxypyrazinones)

RN 177938-63-5 CAPLUS

CN 2(1H)-Pyrazinone, 5,6-diphenyl-3-(phenylmethoxy)- (CA INDEX NAME)



L4 ANSWER 89 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1995:984439 CAPLUS

DOCUMENT NUMBER: 124:146066

TITLE: Regioselective C-functionalization of 2,3-dicyanopyrazine derivatives via photoinduced electron transfer

AUTHOR(S): Mizuno, Kazuhiko; Konishi, Gen-ichi; Nishiyama, Toshinori; Inoue, Hiroo

CORPORATE SOURCE: Coll. Eng., Univ. Osaka Prefecture, Osaka, 593, Japan

SOURCE: Chemistry Letters (1995), (12), 1077-8
 CODEN: CMLTAG; ISSN: 0366-7022

PUBLISHER: Nippon Kagakkai

DOCUMENT TYPE: Journal

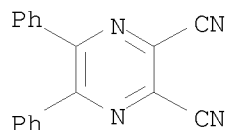
LANGUAGE: English

AB Irradiation of an acetonitrile solution containing 2,3-dicyano-5,6-diphenylpyrazine with allylic silanes, benzylsilane, and ketene silyl acetal gave the mono-substituted products in excellent yields. This reaction is useful for the functionalization of pyrazine ring.

IT 52197-23-6, 2,3-Dicyano-5,6-diphenylpyrazine
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (regioselective allylation or benzylation of 2,3-dicyanopyrazines via photoinduced electron transfer)

RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)

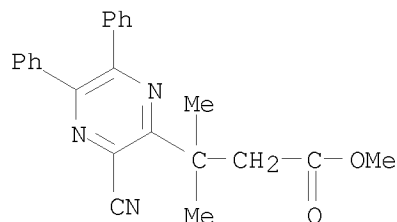


IT 173417-48-6P 173417-50-0P 173417-51-1P
 173417-52-2P 173417-53-3P 173417-54-4P
 RL: SPN (Synthetic preparation); PREP (Preparation)

(regioselective allylation or benzylation of 2,3-dicyanopyrazines via photoinduced electron transfer)

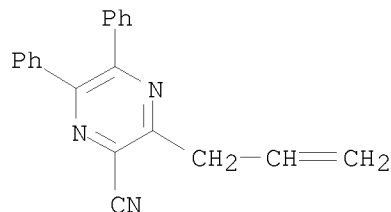
RN 173417-48-6 CAPLUS

CN Pyrazinepropanoic acid, 3-cyano- β,β -dimethyl-5,6-diphenyl-, methyl ester (9CI) (CA INDEX NAME)



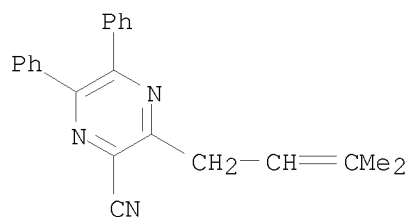
RN 173417-50-0 CAPLUS

CN Pyrazinecarbonitrile, 5,6-diphenyl-3-(2-propenyl)- (9CI) (CA INDEX NAME)



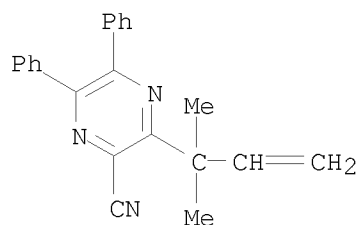
RN 173417-51-1 CAPLUS

CN Pyrazinecarbonitrile, 3-(3-methyl-2-butenyl)-5,6-diphenyl- (9CI) (CA INDEX NAME)



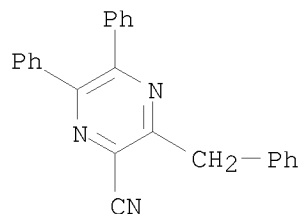
RN 173417-52-2 CAPLUS

CN Pyrazinecarbonitrile, 3-(1,1-dimethyl-2-propenyl)-5,6-diphenyl- (9CI) (CA INDEX NAME)



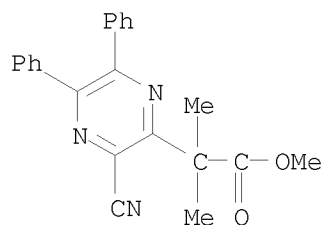
RN 173417-53-3 CAPLUS

CN Pyrazinecarbonitrile, 5,6-diphenyl-3-(phenylmethyl)- (9CI) (CA INDEX NAME)



RN 173417-54-4 CAPLUS

CN Pyrazineacetic acid, 3-cyano- α,α -dimethyl-5,6-diphenyl-, methyl ester (9CI) (CA INDEX NAME)



L4 ANSWER 90 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1995:886069 CAPLUS

DOCUMENT NUMBER: 123:286091

TITLE: Preparation of 2,3-diphenylpyrazine derivatives as herbicides for rice paddy

INVENTOR(S): Yanai, Toshiaki; Tsukamoto, Yoshihisa; Sakamoto, Takashi; Teramura, Masahiro; Pponma, Toyokuni

PATENT ASSIGNEE(S): Sankyo Co, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

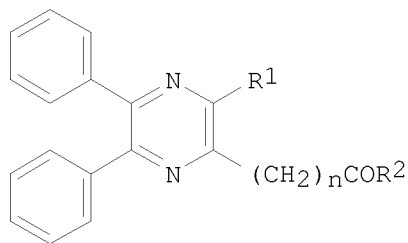
DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

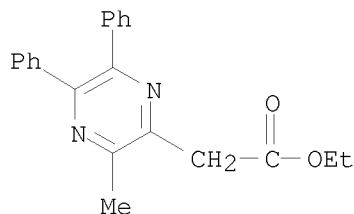
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 07126256	A	19950516	JP 1993-270363	19931028
PRIORITY APPLN. INFO.:			JP 1993-270363	19931028
OTHER SOURCE(S):	MARPAT	123:286091		
GI				

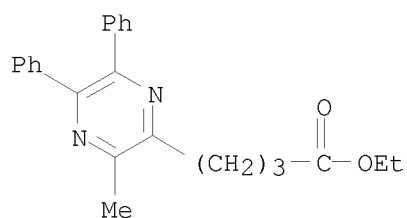


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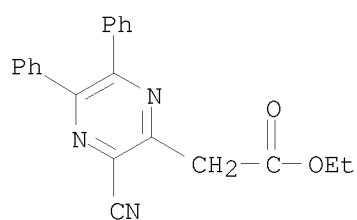
- AB The title compds. [I; R1 = H, halo, C1-4 alkyl, cyano; R2 = OH, C1-8 alkoxy, C3-6 cycloalkyloxy, optionally trialkylsilyl-substituted C1-4 alkoxy-C1-2 alkoxy, C3-4 alkenyloxy or alkynyloxy, PhO, OCH2Ph, pyridylmethyloxy, tetrahydrofuranylmethyloxy, anilino, phenylhydrazino, phenylsulfonylamino, NHOR3, ON:CR4R5, ONHR6, C1-2 alkoxycarbonylmethylthio; wherein R3, R4 = H, Me, Et; R5 = C1-4 alkyl, C3-6 cycloalkyl, (halo)phenyl, (halo)pyridyl, or CR4R5 forms a 5- to 6-membered ring saturated carbocyclyl; R6 = H, C1-4 alkyl or alkylcarbonyl, (halo)benzoyl, C1-4 alkoxycarbonyl] are prepared Thus, di-Et malonate was added dropwise to a suspension of NaH in DMF under ice-cooling and stirred for 15 h, followed by adding a solution of 2-chloro-5,6-diphenylpyrazine in DMF, and the mixture was stirred at 120° for 3 h to give 73.5% di-Et 5,6-diphenyl-2-pyrazinylmalonate. To a solution of the latter compound in EtOH was added 3 N aqueous NaOH and the resulting mixture was stirred at room temperature for 6 h and left to stand at overnight to give, after workup and acidification with dilute aqueous HCl, 83.8% 5,6-diphenyl-2-pyrazinylacetic acid. This compound was dissolved in THF, successively treated dropwise with Et3N, Et chlorocarbonate, and EtOH under ice-cooling and stirring, and stirred at room temperature for 30 min to give 100% I (R1 = H, n = 2, R2 = OEt) (II). II at 20 g/are (preemergence) inhibited 91-100% the growth of 5 weeds including Echinochloa crus-galli, broad leaf weed, Scirpus juncoides, Eleocharis acicularis, Cyperus serotinus, and Eleocharis kuroguwai in flooded rice paddy soil and gave no damage to rice seedlings.
- IT 169500-82-7P 169500-83-8P 169500-84-9P
169500-98-5P 169501-00-2P
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of (diphenylpyrazinyl)alkanoic acid derivs. as herbicides for rice paddy)
- RN 169500-82-7 CAPLUS
- CN Pyrazineacetic acid, 3-methyl-5,6-diphenyl-, ethyl ester (9CI) (CA INDEX NAME)



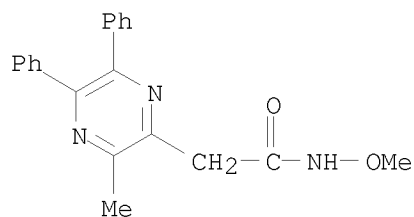
- RN 169500-83-8 CAPLUS
- CN Pyrazinebutanoic acid, 3-methyl-5,6-diphenyl-, ethyl ester (9CI) (CA INDEX NAME)



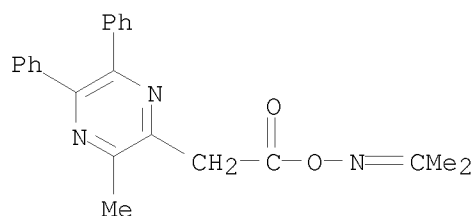
RN 169500-84-9 CAPLUS
 CN Pyrazineacetic acid, 3-cyano-5,6-diphenyl-, ethyl ester (9CI) (CA INDEX NAME)



RN 169500-98-5 CAPLUS
 CN Pyrazineacetamide, N-methoxy-3-methyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



RN 169501-00-2 CAPLUS
 CN 2-Propanone, O-[(3-methyl-5,6-diphenylpyrazinyl)acetyl]oxime (9CI) (CA INDEX NAME)

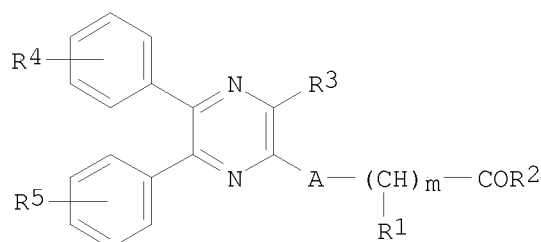


L4 ANSWER 91 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1995:541426 CAPLUS
 DOCUMENT NUMBER: 122:290892
 TITLE: Preparation of diphenylpyrazine derivatives as herbicides

INVENTOR(S): Yanai, Toshiaki; Tsukamoto, Yoshihisa; Sakamoto, Takashi; Teramura, Masahiro; Pponma, Toyokuni
 PATENT ASSIGNEE(S): Sankyo Co, Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 28 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07033752	A	19950203	JP 1993-176525	19930716
PRIORITY APPLN. INFO.:			JP 1993-176525	19930716
OTHER SOURCE(S):	MARPAT	122:290892		

GI

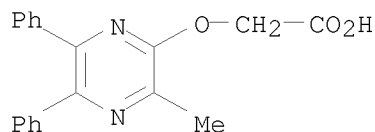


AB The title compds. [I; R1 = H, alkyl, alkoxy, carbonylmethyl; R2 = alkyl optionally halogenated by 1-3 halogen atoms, alkoxy, alkenyloxy, OH, cyclohexyloxy, PhO, pyridylcyanomethoxy, (un)substituted NH2; R3 = H, alkyl, NO2, NH2, cyano, halo, PhCO, CH2Ph, alkoxy, carbonyl, alkoxy, carbonylmethoxy; R4, R5 = H, halo, alkyl, alkoxy; A = O, S(O)_n (wherein n = 0, 1, 2), NHNH, NH, NMe; m = 0, 1], which show excellent herbicidal activity for weeds of rice paddy such *Echinochloa crus-galli*, broad leaf weeds, and *Scirpus juncoides*, are prepared. A herbicide composition contains I as the active ingredient. Thus, 2-hydroxy-5,6-diphenylpyrazine was slowly added dropwise to a suspension of NaH in DMF under ice-cooling followed by adding Et bromoacetate dropwise and the resulting mixture was stirred at room temperature for 1.5 h to give 100% Et (5,6-diphenyl-2-pyrazinyloxy)acetate (II). II at 50 g/are inhibited the growth of *E. crus-galli*, broad leaf weed, *Eleocharis acicularis*, *Cyperus serotinus*, *Eleocharis kuroguwai*, and *S. juncoides* by 91-100% in potted paddy soil, whereas rice seedlings were not damaged.

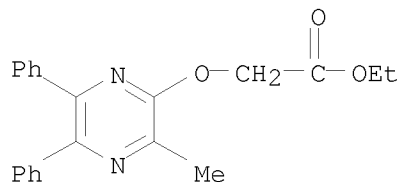
IT 162928-73-6P 162928-74-7P 162928-80-5P
 162928-81-6P 162928-85-0P 162929-01-3P
 RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
 (preparation of diphenylpyrazine derivs. as herbicides)

RN 162928-73-6 CAPLUS

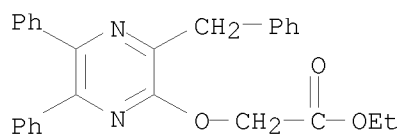
CN Acetic acid, [(3-methyl-5,6-diphenylpyrazinyl)oxy]- (9CI) (CA INDEX NAME)



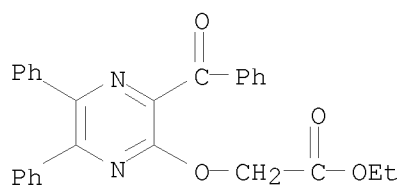
RN 162928-74-7 CAPLUS
 CN Acetic acid, [(3-methyl-5,6-diphenylpyrazinyl)oxy]-, ethyl ester (9CI)
 (CA INDEX NAME)



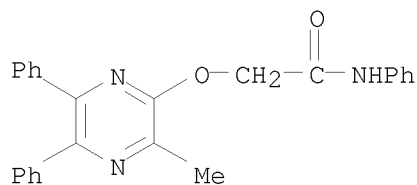
RN 162928-80-5 CAPLUS
 CN Acetic acid, [[5,6-diphenyl-3-(phenylmethyl)pyrazinyl]oxy]-, ethyl ester
 (9CI) (CA INDEX NAME)



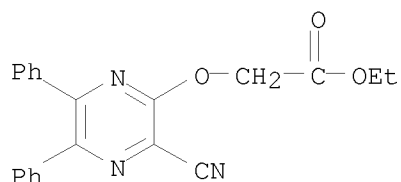
RN 162928-81-6 CAPLUS
 CN Acetic acid, [(3-benzoyl-5,6-diphenylpyrazinyl)oxy]-, ethyl ester (9CI)
 (CA INDEX NAME)



RN 162928-85-0 CAPLUS
 CN Acetamide, 2-[(3-methyl-5,6-diphenylpyrazinyl)oxy]-N-phenyl- (9CI) (CA
 INDEX NAME)



RN 162929-01-3 CAPLUS
 CN Acetic acid, [(3-cyano-5,6-diphenylpyrazinyl)oxy]-, ethyl ester (9CI) (CA
 INDEX NAME)



L4 ANSWER 92 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1995:450970 CAPLUS

DOCUMENT NUMBER: 122:214787

TITLE: Preparation and properties of novel soluble poly(aryl ether)s bearing covalently bound tetrapyrazinoporphyrazine units

AUTHOR(S): Yang, Haixin; Sargent, Jonathan R.; Hay, Allan S.

CORPORATE SOURCE: Dep. of Chemistry, McGill Univ., Montreal, QC, H3A 2K6, Can.

SOURCE: Journal of Polymer Science, Part A: Polymer Chemistry (1995), 33(6), 989-97

CODEN: JPACEC; ISSN: 0887-624X

PUBLISHER: Wiley

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Thermooxidatively stable amorphous poly(dicyanopyrazine ether)s with high glass transition temps. were synthesized and converted into poly(aryl ether)s bearing covalently bound zinc (II) 2,3,9,10,16,17,23,24-octaphenyltetrapyrazinoporphyrazine units. The polyethers are soluble in common organic solvents and can be cast into strong and flexible films. The maximum absorption wavelength of the poly(aryl ether)s bearing zinc(II) 2,3,9,10,16,17,23,24-octaphenyltetrapyrazinoporphyrazine units in chloroform is 654 nm.

IT 162193-56-8DP, zinc pyrazinoporphyrazine derivs.

162193-57-9DP, zinc pyrazinoporphyrazine derivs.

RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation and UV absorption of poly(dicyanopyrazine ether) containing covalently bound zinc pyrazinoporphyrazine)

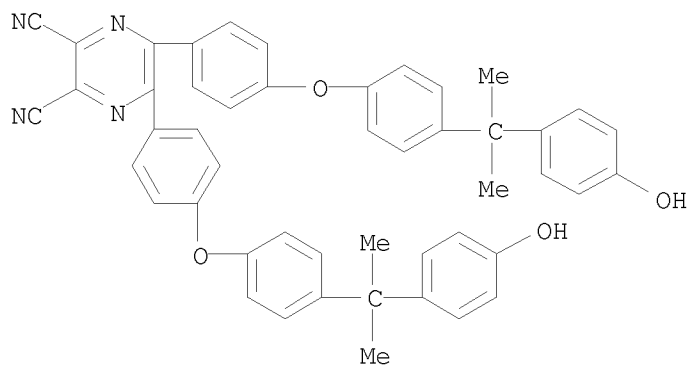
RN 162193-56-8 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[4-[1-(4-hydroxyphenyl)-1-methylethyl]phenoxy]phenyl]-, polymer with 1,1'-sulfonylbis[4-fluorobenzene] (9CI) (CA INDEX NAME)

CM 1

CRN 162193-55-7

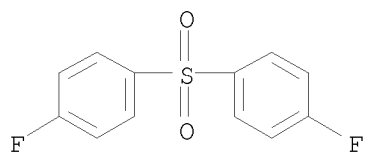
CMF C48 H38 N4 O4



CM 2

CRN 383-29-9

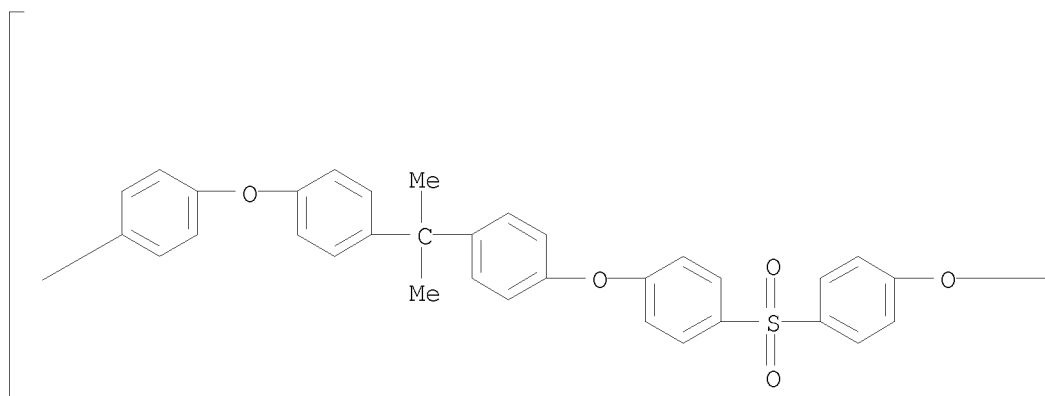
CMF C12 H8 F2 O2 S

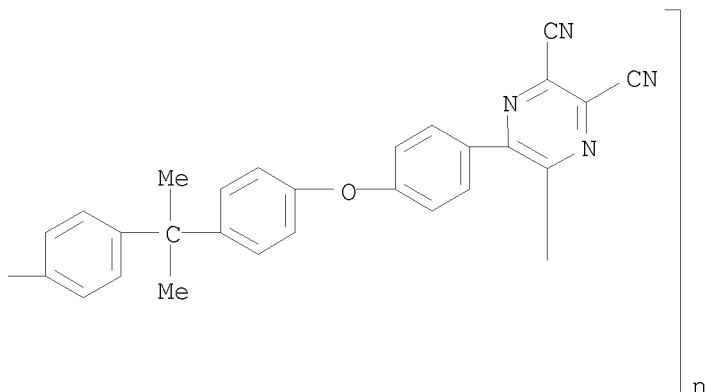


RN 162193-57-9 CAPLUS

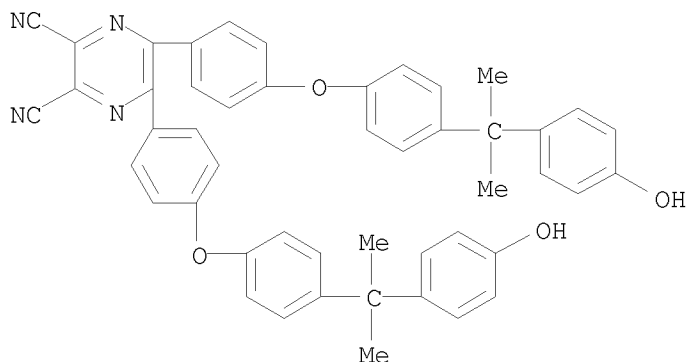
CN Poly[(5,6-dicyano-2,3-pyrazinediyl)-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenyleneoxy-1,4-phenylenesulfonyl-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenyleneoxy-1,4-phenylene] (9CI)
(CA INDEX NAME)

PAGE 1-A





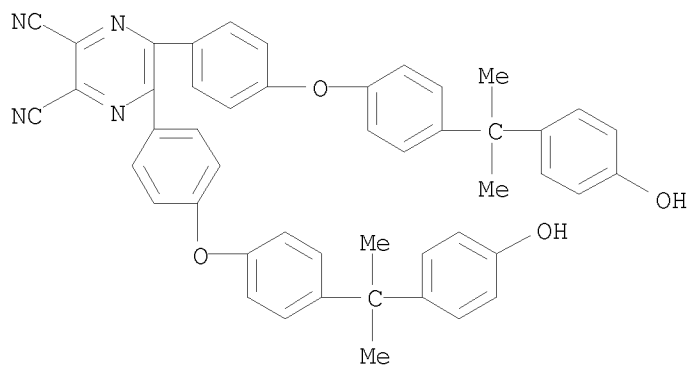
IT 162193-55-7P 162193-56-8P 162193-57-9P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (preparation poly(dicyanopyrazine ether) and polymerization and
 post-treatment to
 obtain covalently bound zinc pyrazinoporphyrazine)
 RN 162193-55-7 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[4-[1-(4-hydroxyphenyl)-1-
 methylethyl]phenoxy]phenyl]- (CA INDEX NAME)



RN 162193-56-8 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-[4-[1-(4-hydroxyphenyl)-1-
 methylethyl]phenoxy]phenyl]-, polymer with 1,1'-sulfonylbis[4-
 fluorobenzene] (9CI) (CA INDEX NAME)

CM 1

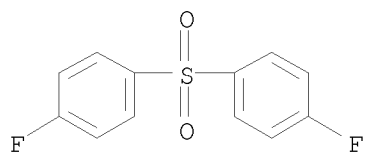
CRN 162193-55-7
 CMF C48 H38 N4 O4



CM 2

CRN 383-29-9

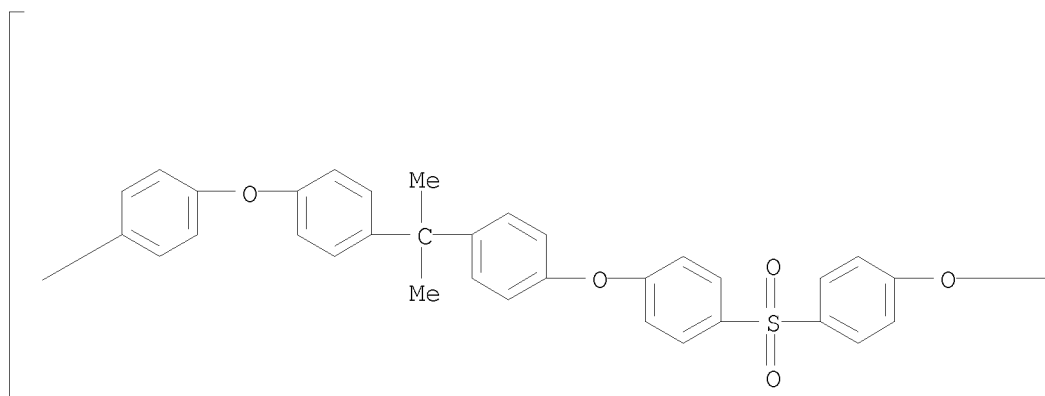
CMF C12 H8 F2 O2 S

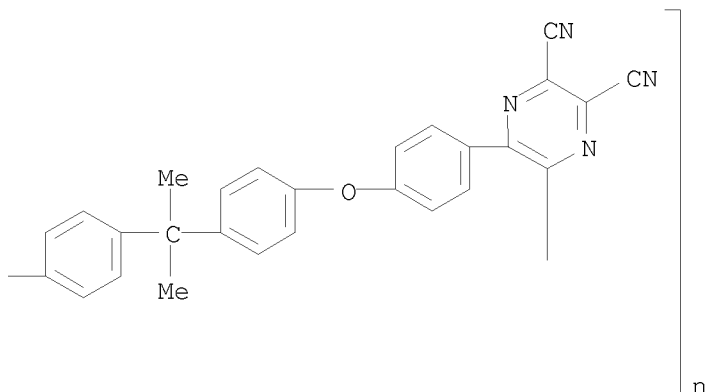


RN 162193-57-9 CAPLUS

CN Poly[(5,6-dicyano-2,3-pyrazinediyl)-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenyleneoxy-1,4-phenylenesulfonyl-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenyleneoxy-1,4-phenylene] (9CI)
(CA INDEX NAME)

PAGE 1-A





L4 ANSWER 93 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1995:297129 CAPLUS

DOCUMENT NUMBER: 122:95279

TITLE: Octa-(4-tert-butylphenyl)-tetrapyrazinoporphyrazine and its metal complexes

AUTHOR(S): Freyer, Wolfgang

CORPORATE SOURCE: Max-Born-Inst. Nichtlineare Optik

Kurzzeitspektroskopie, Berlin, Germany

SOURCE: Journal fuer Praktische Chemie/Chemiker-Zeitung

(1994), 336(8), 690-2

CODEN: JPCCEM; ISSN: 0941-1216

PUBLISHER: Barth

DOCUMENT TYPE: Journal

LANGUAGE: German

AB Octa(4-tert-butylphenyl)tetrapyrazinoporphyrazine and its copper and zinc complexes were prepared. The absorption spectra for the free and complexed species were recorded, as well as the fluorescence spectra of the free species in benzene and DMSO. These complexes have potential applications as photodynamic sensitizers for tumor therapy.

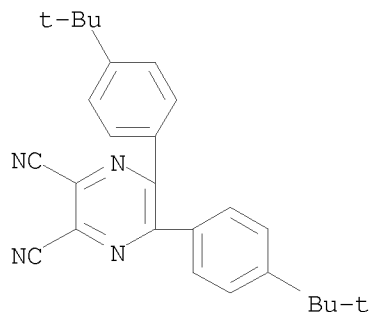
IT 144828-31-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(for preparation of octa(tert-butylphenyl)tetrapyrazinoporphyrazine and its copper and zinc complexes)

RN 144828-31-9 CAPLUS

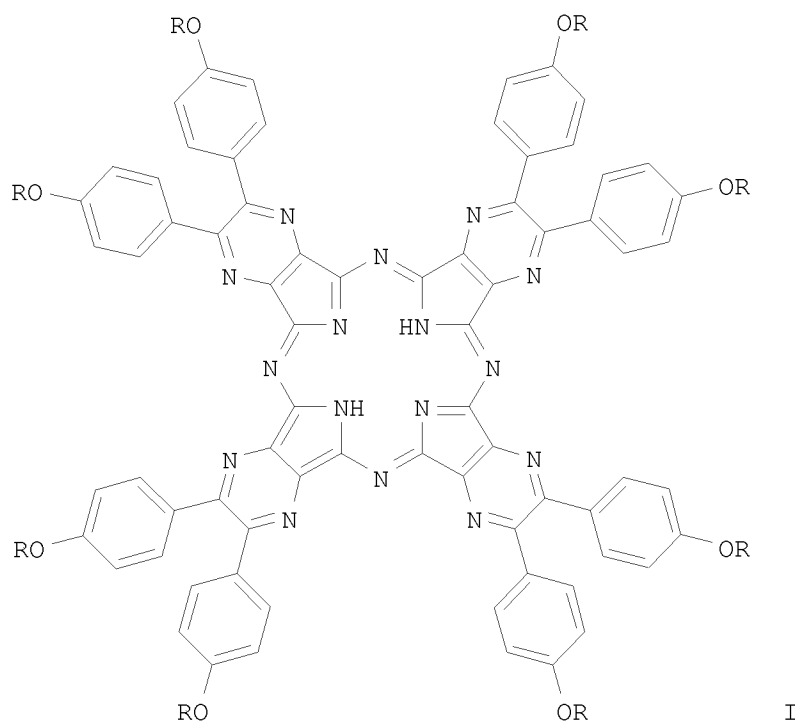
CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(1,1-dimethylethyl)phenyl]- (CA INDEX NAME)



L4 ANSWER 94 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1995:61681 CAPLUS
 DOCUMENT NUMBER: 122:20995
 TITLE: Octakis(alkoxy phenyl)tetrapyradinoporphyrazine and
 discotic liquid crystal composition containing same
 INVENTOR(S): Yamamoto, Iwao; Oota, Kazuchika
 PATENT ASSIGNEE(S): Iisutan KK, Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06100566	A	19940412	JP 1992-273443	19920918
PRIORITY APPLN. INFO.:			JP 1992-273443	19920918
OTHER SOURCE(S):	MARPAT	122:20995		

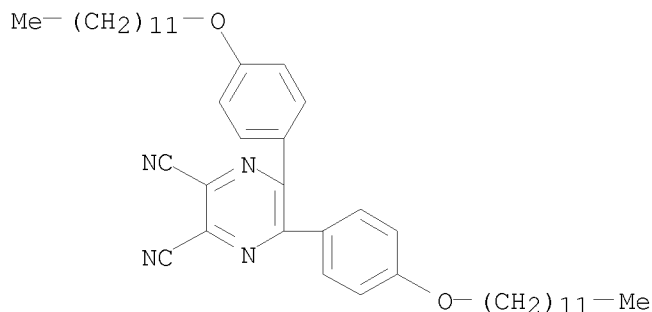
GI



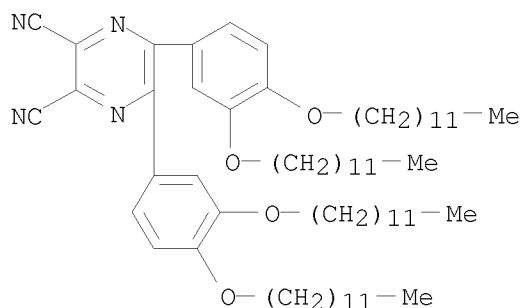
AB The title compound has a formula I (R = C1-30 straight chain alkyl, or 2-ethylhexyl-branched alkyl), which is able to form transition metal complexes. The liquid crystal composition contains ≥ 1 the above compound or complexes.

IT 159254-45-2P 159254-47-4P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and reaction of, tetrapyradinoporphyrazine transition metal complex from)

RN 159254-45-2 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(dodecyloxy)phenyl]- (CA INDEX NAME)



RN 159254-47-4 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[3,4-bis(dodecyloxy)phenyl]- (CA INDEX NAME)



L4 ANSWER 95 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1995:1871 CAPLUS

DOCUMENT NUMBER: 122:292077

TITLE: Structure-property relationships in PMR-15-type polyimide resins: III. New polyimides incorporating triazoles, quinoxalines, pyridopyrazines and pyrazinopyridazines

AUTHOR(S): Jigajinni, V B.; Preston, P N.; Shah, V K.; Simpson, S W.; Soutar, I.; Stewart, N J.

CORPORATE SOURCE: Dep. Chem., Heriot-Watt Univ., Riccarton Edinburgh, EH14 4AS, UK

SOURCE: High Performance Polymers (1993), 5(3), 239-57
 CODEN: HPPOEX; ISSN: 0954-0083

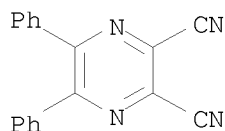
DOCUMENT TYPE: Journal

LANGUAGE: English

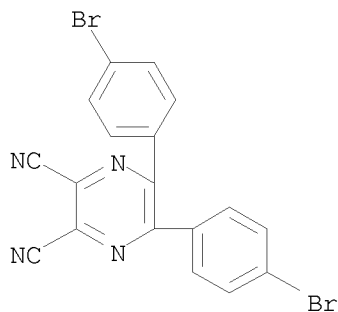
AB Polyimide oligomers (prepolymers) and resins of the PMR-15 type were prepared from 5-norbornene-2,3-dicarboxylic half acid ester, 3,3',4,4'-benzophenonetetracarboxylic diester and a series of diamines incorporating 1,2,3-triazole, quinoxaline, pyrido[2,3-b]pyrazine, pyrido[3,4-b]pyrazine, benzo[g]quinoxaline, pyrazino[2,3-d]pyridazine, and bis(pyrido[3,4-b]pyrazino)benzene ring systems. Two tetraamines in the bis(pyrazino[2,3-d]pyridazino)benzene ring system were also employed. Selected diamine monomers from the above ring systems provide PMR-15-analog resins of higher thermal and thermooxidative stability than PMR-15 itself. The phys. behavior during oligomerization and curing of

PMR systems was studied by dynamic mech. thermal anal. Traces akin to that from PMR-15 are obtained using certain diamine monomers (e.g. triazole and pyrido[3,4-b]pyrazine containing) but a featureless thermogram is observed using tetraamines in the bis(pyrazino[2,3-d]pyridazino) benzene system.

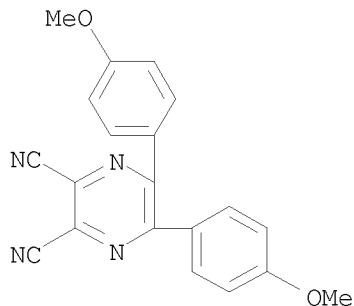
IT 52197-23-6P, 2,3-Dicyano-5,6-diphenylpyrazine 101579-12-8P
 , 2,3-Dicyano-5,6-di(4'-bromophenyl)pyrazine 134071-89-9P,
 2,3-Dicyano-5,6-di(4'-methoxyphenyl)pyrazine 160904-08-5P,
 2,3-Dicyano-5,6-di(3'-nitrophenyl)pyrazine 160904-12-1P,
 1,4-Bis[5'-(2',3'-dicyano-6'-(3''-nitrophenyl)pyrazino)]benzene
 160904-13-2P, 1,4-Bis[5-(2',3'-dicyano-6'-phenylpyrazino)]benzene
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (intermediate; preparation and properties of polyimides incorporating
 triazoles, quinoxalines, pyridopyrazines and pyrazinopyridazines)
 RN 52197-23-6 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)



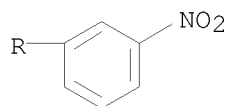
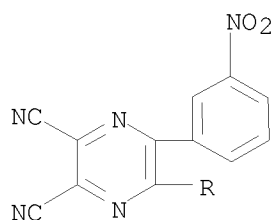
RN 101579-12-8 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-bromophenyl)- (CA INDEX NAME)



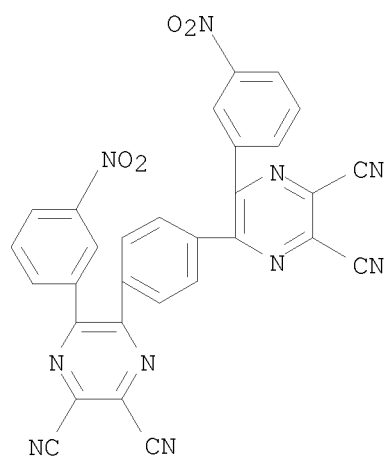
RN 134071-89-9 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-methoxyphenyl)- (CA INDEX NAME)



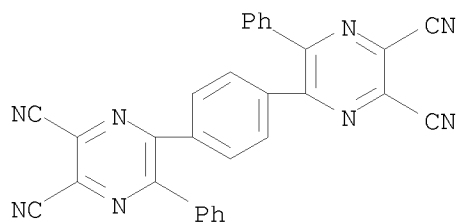
RN 160904-08-5 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(3-nitrophenyl)- (CA INDEX NAME)



RN 160904-12-1 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,5'-(1,4-phenylene)bis[6-(3-nitrophenyl)-
 (CA INDEX NAME)



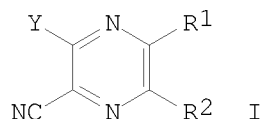
RN 160904-13-2 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,5'-(1,4-phenylene)bis[6-phenyl- (9CI) (CA
 INDEX NAME)



L4 ANSWER 96 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1994:483374 CAPLUS
 DOCUMENT NUMBER: 121:83374
 TITLE: Preparation of pyrazinecarbonitriles
 INVENTOR(S): Sato, Nobuhiro; Matsui, Nobuo

PATENT ASSIGNEE(S): Nippon Soda Co, Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06001776	A	19940111	JP 1992-184600	19920618
PRIORITY APPLN. INFO.:			JP 1992-184600	19920618
OTHER SOURCE(S):	CASREACT 121:83374; MARPAT 121:83374			
GI				



AB The title compds. I [R¹, R² = H, (substituted) alkyl, (substituted) alkenyl, (substituted) alkynyl, (substituted) aryl, (substituted) alkoxy carbonyl; Y = XR⁴; X = O, NR⁵; R⁴ = H, (substituted) alkyl, (substituted) alkenyl, (substituted) alkynyl, (substituted) aryl; if X = O, then R⁴ ≠ H; R⁵ = H, (substituted) alkyl, (substituted) alkenyl, (substituted) alkynyl], some of which have fluorescent property (no data), are prepared by reaction of I [Y = O₂SR³; R³ = (substituted) alkyl, (substituted) Ph] with R⁴XH (R⁴, X = same as I). A THF solution of 0.491 g I (R¹ = R² = H, Y = O₂SPh) was treated with aqueous NH₃ and NEt₃ at room

temperature

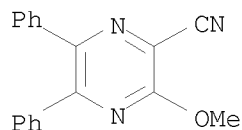
for 6 h to give 0.196 g I (R¹ = R² = H, Y = NH₂).

IT 75018-08-5P 146779-35-3P

RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of, from sulfonylpiperazine carbonitrile)

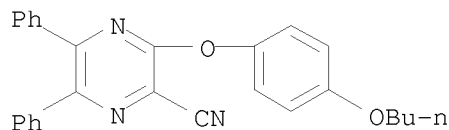
RN 75018-08-5 CAPLUS

CN Pyrazine carbonitrile, 3-methoxy-5,6-diphenyl- (9CI) (CA INDEX NAME)

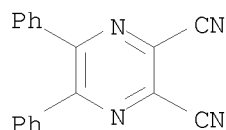


RN 146779-35-3 CAPLUS

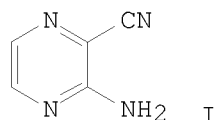
CN Pyrazine carbonitrile, 3-(4-butoxyphenoxy)-5,6-diphenyl- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 1993:616163 CAPLUS
 DOCUMENT NUMBER: 119:216163
 TITLE: Synthesis and spectral properties of soluble phthal-
 and naphthalocyanine aza analogs
 AUTHOR(S): Galpern, M. G.; Kudrevich, S. V.; Novozhilova, I. G.
 CORPORATE SOURCE: Nauchno-Issled. Inst. Org. Poluprod. Krasitelei,
 Moscow, 103787, Russia
 SOURCE: Khimiya Geterotsiklicheskikh Soedinenii (1993), (1),
 58-63
 CODEN: KGSSAQ; ISSN: 0132-6244
 DOCUMENT TYPE: Journal
 LANGUAGE: Russian
 AB Tetra-2,3-(4,5-diphenylpyrazino)porphyrazine (H2L), VOL and VOL1 (H2L1 =
 tetra-2,3-(4-phenylquinolino)porphyrazine) were prepared and characterized
 by electronic spectra.
 IT 52197-23-6, 4,5-Diphenyl-2,3-dicyanopyrazine
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (cyclocondensation of, with urea with and without vanadium chloride)
 RN 52197-23-6 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)

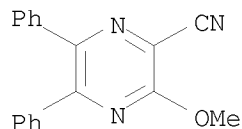


L4 ANSWER 98 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1993:191690 CAPLUS
 DOCUMENT NUMBER: 118:191690
 TITLE: Studies on pyrazines. 24. A simple and versatile
 synthetic method for 3-alkoxy- and
 3-aminopyrazinecarbonitriles
 AUTHOR(S): Sato, Nobuhiro; Matsui, Nobuo
 CORPORATE SOURCE: Dep. Chem., Yokohama City Univ., Yokohama, 236, Japan
 SOURCE: Journal of Heterocyclic Chemistry (1992), 29(7),
 1689-92
 CODEN: JHTCAD; ISSN: 0022-152X
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 118:191690
 GI

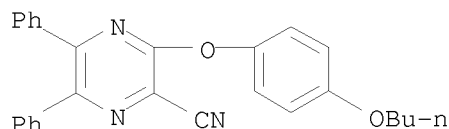


AB New and concise synthetic methods of 3-alkoxy- and 3-
 aminopyrazinecarbonitriles by nucleophilic displacement of
 3-(phenylsulfonyl)-2-pyrazinecarbonitriles are reported. Amination/aromatic
 nucleophilic substitution of 3-(phenylsulfonyl)-2-pyrazinecarbonitrile
 with ammonium hydroxide gave 3-amino-2-pyrazinecarbonitrile (I) (82%
 yield); I is an intermediate for pteridine compds.

IT 75018-08-5P 146779-35-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, by alkoxylation of phenylsulfonyl derivative)
RN 75018-08-5 CAPLUS
CN Pyrazinecarbonitrile, 3-methoxy-5,6-diphenyl- (9CI) (CA INDEX NAME)

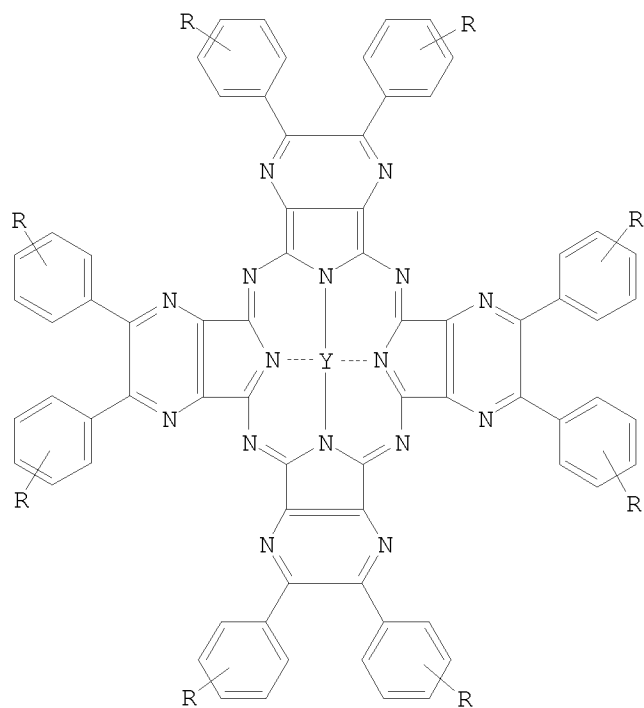


RN 146779-35-3 CAPLUS
CN Pyrazinecarbonitrile, 3-(4-butoxyphenoxy)-5,6-diphenyl- (9CI) (CA INDEX NAME)



L4 ANSWER 99 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1993:22088 CAPLUS
DOCUMENT NUMBER: 118:22088
TITLE: Preparation of octakis(alkylphenyl)tetrapyrazinoporphy
rins as neoplasm inhibitors
INVENTOR(S): Freyer, Wolfgang
PATENT ASSIGNEE(S): Zentralinstitut fuer Optik und Spektroskopie, Germany
SOURCE: Ger. Offen., 4 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 4109595	A1	19920924	DE 1991-4109595	19910320
PRIORITY APPLN. INFO.:			DE 1991-4109595	19910320
OTHER SOURCE(S):	MARPAT	118:22088		
GI				



I

AB Title compds. [I; R = (cyclo)alkyl; Y = 2H, metal ion] were prepared as neoplasm inhibitors (no data). Thus, 5,6-bis(4-tert-butylphenyl)-2,3-dicyanopyrazine was refluxed 4 h with Zn(OAc)₂ as ZnCl₂ to give I (R = 4-CMe₃, Y = Zn²⁺).

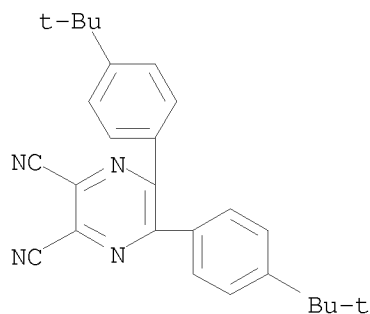
IT 144828-31-9

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, in preparation of octakis(alkylphenyl)tetrapyrazinoporphyrin neoplasm inhibitor)

RN 144828-31-9 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(1,1-dimethylethyl)phenyl]- (CA INDEX NAME)



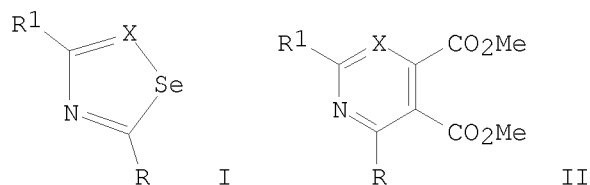
L4 ANSWER 100 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1992:41417 CAPLUS

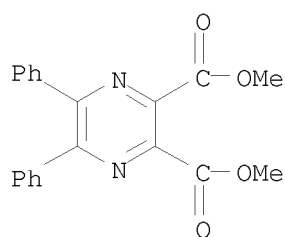
DOCUMENT NUMBER: 116:41417

TITLE: Novel conversion of selenium-containing five-membered aromatics to nitrogen-containing six-membered aromatics via hetero Diels-Alder reaction with

acetylenic dienophiles
 AUTHOR(S): Takikawa, Yuji; Hikage, Shigeki; Matsuda, Youichi;
 Higashiyama, Kazuyuki; Takeishi, Yoshiyuki; Shimada,
 Kazuaki
 CORPORATE SOURCE: Fac. Eng., Iwate Univ., Morioka, 020, Japan
 SOURCE: Chemistry Letters (1991), (11), 2043-6
 CODEN: CMLTAG; ISSN: 0366-7022
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 116:41417
 GI

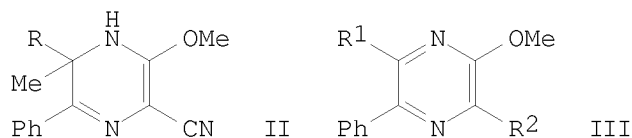


AB Treatment of selenium-containing five-membered heteroaroms. with acetylenic
 dienophiles afforded several nitrogen heterocycles in good to moderate
 yields under thermal reaction conditions. These reactions proceed through
 a sequential [4 + 2] cycloaddn.-selenium extrusion pathway. Thus,
 reaction of MeO2CC.tplbond.CCO2Me with selenazoles I [X = N, R = R1 = Ph,
 4-MeOC6H4, Pr, Me(CH2)6, PhCH2S, Me2N; X = CH, R = Ph, R1 = Ph, 4-MeC5H4,
 4-MeOC6H4, 4-ClC6H4] gave pyrimidine and pyridine derivs. II in 17-99%
 yields.
 IT 80356-81-6P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
 RN 80356-81-6 CAPLUS
 CN 2,3-Pyrazinedicarboxylic acid, 5,6-diphenyl-, dimethyl ester (9CI) (CA
 INDEX NAME)



L4 ANSWER 101 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1992:41392 CAPLUS
 DOCUMENT NUMBER: 116:41392
 TITLE: Condensation reactions of (1E,3E)-4-amino-3-cyano-4-
 methoxy-1-phenyl-2-azabutadiene and
 electrocyclizations of diazatrilenes
 AUTHOR(S): Freeman, Fillmore; Kim, Darrick S. H. L.
 CORPORATE SOURCE: Dep. Chem., Univ. California, Irvine, CA, 92717, USA
 SOURCE: Journal of Organic Chemistry (1992), 57(2), 550-2
 CODEN: JOCEAH; ISSN: 0022-3263
 DOCUMENT TYPE: Journal
 LANGUAGE: English

OTHER SOURCE(S): CASREACT 116:41392
GI



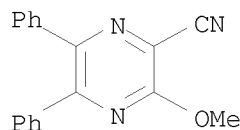
AB (1E,3E)-4-Amino-3-cyano-4-methoxy-1-phenyl-2-azabutadiene (I) reacts with 2-methoxypropene in refluxing methylbenzene in the presence of catalytic pyridinium p-toluenesulfonate to give 2-cyano-5,5-dimethyl-3-methoxy-6-phenyl-4,5-dihydro-1,4-diazabenzene II (R = Me). Similarly, I reacts with tri-Et orthoformate and tri-Et orthobenzoate to give 1,4-diazabenzene II, (R1 = H, R2 = cyano) and III (R1 = Ph, R2 = cyano), resp. With tri-Et orthoacetate I gives III (R1 = Me, R2 = cyano) and II (R = OEt). Phenylmethanal and (2-thienyl)methanal react with I to give 1,4-diazabenzene III (R1 = Ph, R2 = H; R1 = 2-thienyl, R2 = H). Diazatrienes (enediimines) are proposed as the intermediates undergoing six π -electron electrocyclizations to 1,4-diazabenzene.

IT 75018-08-5P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 75018-08-5 CAPLUS

CN Pyrazinecarbonitrile, 3-methoxy-5,6-diphenyl- (9CI) (CA INDEX NAME)



L4 ANSWER 102 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1991:431112 CAPLUS

DOCUMENT NUMBER: 115:31112

TITLE: Near IR-absorbing tetrahydrazinoporphyrazine derivatives

INVENTOR(S): Nagasaki, Fumihiko; Hatano, Hiromi; Takahashi, Hiroshi

PATENT ASSIGNEE(S): Nippon Soda Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

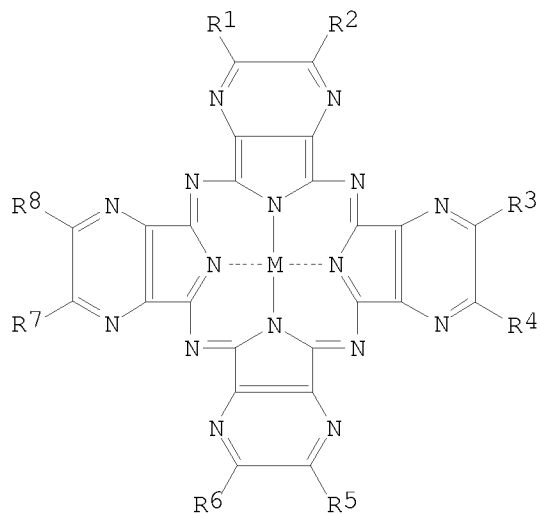
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 03007288	A	19910114	JP 1989-219865	19890825
PRIORITY APPLN. INFO.:			JP 1989-32143	A1 19890210
			JP 1989-73154	A1 19890324

OTHER SOURCE(S): MARPAT 115:31112

GI



I

AB Tetrahydrazinoporphyrazine derivs. I [R1-8 = H, halo, amino, substituted Ph or furyl, (un)substituted thienyl, PhO, alkoxy, phenylthio, or alkylthio; R1R2, R3R4, R5R6, R7R8 = 1,2-phenylenedioxy, 1,2-phenylenedithio; ≥1 of R1-8 is not H; M = 2H, metal, metal oxide, metal hydroxide, acyl metal, alkoxy metal, siloxy metal, metal halide] show good organic solvent solubility and are useful for optical recording,

photosensitive materials, catalysts, and freshness preservatives (no data). Thus, stirring 2,3-dicyano-5,6-diphenylpyrazine and VC13 in chloronaphthalene under reflux for 5 h gave 48% I (R1-8 = Ph, M = VO) showing λ_{\max} 690 nm (in 97% H2SO4).

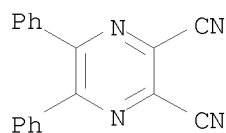
IT 52197-23-6, 2,3-Dicyano-5,6-diphenylpyrazine 134071-88-8
 , 2,3-Dicyano-5,6-bis(4-isopropylphenyl)pyrazine 134071-89-9,
 2,3-Dicyano-5,6-bis(4-methoxyphenyl)pyrazine

RL: USES (Uses)

(cyclocondensation and complexation of)

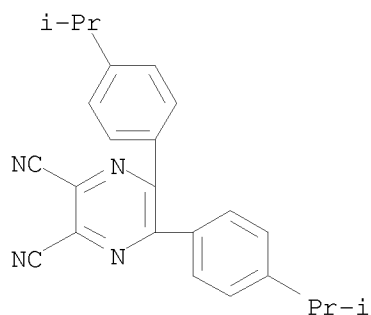
RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)

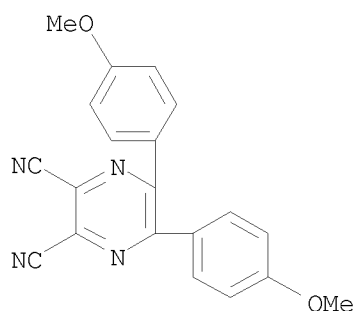


RN 134071-88-8 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-bis[4-(1-methylethyl)phenyl]- (CA INDEX NAME)

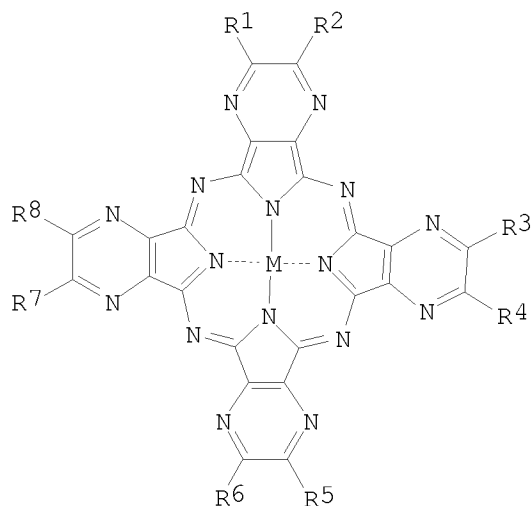


RN 134071-89-9 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-methoxyphenyl)- (CA INDEX NAME)



L4 ANSWER 103 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1991:133032 CAPLUS
 DOCUMENT NUMBER: 114:133032
 TITLE: Tetrapyrazinoporphyrazine compounds
 INVENTOR(S): Tokita, Sumio; Kojima, Masatoshi; Cho, Mikio; Nishi, Hisao; Tomota, Haruhiko; Saito, Shojiro; Shiraishi, Shinsaku
 PATENT ASSIGNEE(S): Nippon Soda Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 02232267	A	19900914	JP 1989-53327	19890306
PRIORITY APPLN. INFO.: GI			JP 1989-53327	19890306



I

AB The title compds. useful for optical recording media, electrophotog. and laser printer photoreceptors, redox catalysts, and flower and food freshness retainers have the general formula I (R1-8 = H, Ph, furyl, excluding all R1-8 = H; M = H, metal, metal oxide, metal hydroxide, acylmetal, alkoxymetal, siloxymetal, metal halide).

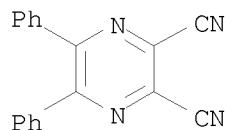
IT 52197-23-6

RL: USES (Uses)

(tetrapyrazinoporphyrazines for)

RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)



L4 ANSWER 104 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1991:34976 CAPLUS

DOCUMENT NUMBER: 114:34976

TITLE: Some new chromogenic reagents for copper(I) and iron(II); pyridyl-substituted pyrazine and quinoxaline compounds

AUTHOR(S): Khuhawar, M. Y.; Khaskheli, G. Q.

CORPORATE SOURCE: Inst. Chem., Univ. Sindh, Jamshoro, Pak.

SOURCE: Journal of the Chemical Society of Pakistan (1990), 12(1), 52-61

CODEN: JCSPDF; ISSN: 0253-5106

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Fifteen new pyridyl-substituted pyrazine ligands were synthesized and their IR and mass spectra were recorded. The ligands containing Et, Me, or Ph groups adjacent to donor nitrogen atoms in aromatic pyridyl or pyrazine rings react only with copper(I), but the reagents 2,3-bis(2'-pyridyl)-5-phenyl-5,6-dihydropyrazine, 2,3-bis(2'-pyridyl)-5-phenyl-6-methyl-5,6-dihydropyrazine, 2,5-diphenyl-3-(2'-pyridyl)-5,6-dihydropyrazine, and 2,3-bis(2'-pyridyl)-5-phenylpyrazine react with copper(I) and iron(II) to

form colored complexes. The reactions and effects of Me, Et, and Ph substitution were studied in terms of solution stability, molar absorptivity and wavelength of maximum absorbance. 2,3-Bis(2'-(6-methylpyridyl)]-5,5,6,6-tetramethyl-5,6-dihydropyrazine is the best chromogenic reagent for copper determination, and was applied to the anal. of water and human hair.

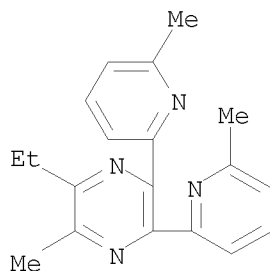
IT 131167-64-1P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and complexation reaction of, with copper(I))

RN 131167-64-1 CAPLUS

CN Pyrazine, 2-ethyl-3-methyl-5,6-bis(6-methyl-2-pyridinyl)- (CA INDEX NAME)



RL: PRP (Properties)
(visible spectra of

L4 ANSWER 105 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1990:440625 CAPLUS

DOCUMENT NUMBER: 113:40625

TITLE: New pyridyl-substituted pyrazine ligands as spectrophotometric reagents for copper and iron

AUTHOR(S): Belcher, R.; Khuhawar, M. Y.; Stephen, W. I.

CORPORATE SOURCE: Dep. Chem., Univ. Birmingham, Birmingham, B15 2TT, UK

SOURCE: Journal of the Chemical Society of Pakistan (1989), 11(3), 185-93

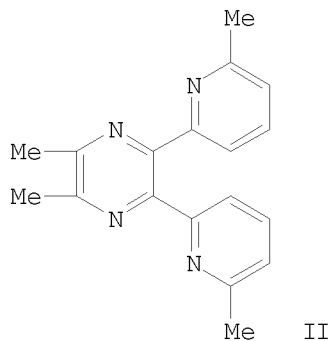
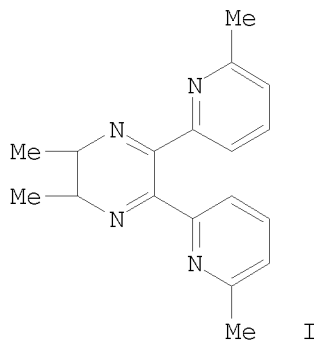
CODEN: JCSPDF; ISSN: 0253-5106

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 113:40625

GI



AB Twelve new Pyridyl-substituted dihydropyrazine and pyrazine ligands have been prepared by condensation of dioxo-1-phenyl-2-(2'-pyridyl), 2,2'-pyridyl and 6,6'-dimethyl-2,2'-pyridyl with ethylenediamine, 2,3-diaminobutane,

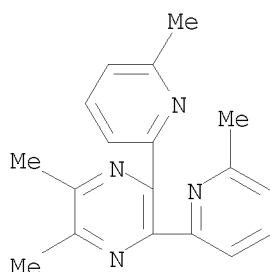
2-methyl-1,2-diaminopropane and meso-stilbenediamine. The reagents have been assessed for solvent extraction and spectrophotometric detns. of copper and iron. The reagents I and II are particularly found useful with anal. selectivity similar to neocuproine.

IT 89684-67-3

RL: RCT (Reactant); RACT (Reactant or reagent)
(complexation of, with copper and iron)

RN 89684-67-3 CAPLUS

CN Pyrazine, 2,3-dimethyl-5,6-bis(6-methyl-2-pyridinyl)- (CA INDEX NAME)

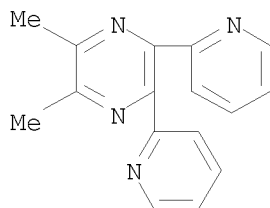


IT 89684-66-2P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and complexation of, with copper and iron)

RN 89684-66-2 CAPLUS

CN Pyrazine, 2,3-dimethyl-5,6-di-2-pyridinyl- (CA INDEX NAME)



L4 ANSWER 106 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1990:35897 CAPLUS

DOCUMENT NUMBER: 112:35897

TITLE: Preparation of substituted 2-cyanopyrazines

INVENTOR(S): Yagihara, Tomio; Hatano, Hiromi; Furukawa, Naomichi

PATENT ASSIGNEE(S): Nippon Soda Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

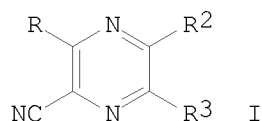
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01172377	A	19890707	JP 1987-329358	19871225
PRIORITY APPLN. INFO.:			JP 1987-329358	19871225
OTHER SOURCE(S):	MARPAT	112:35897		

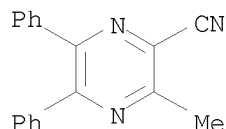
GI



AB The title compds. I [R = R¹; R¹ = alkyl, alkenyl, alkynyl, (un)substituted aryl, aralkyl, heterocyclyl; R², R³ = H, alkyl, aryl, heterocyclyl] (II), useful as intermediates for drugs, agrochems., perfumes, and polymers, are prepared by treatment of I (R = SO₂R⁴; R⁴ = alkyl, aralkyl, aryl) (III) with R¹MgX (X = halo). A THF solution of MeMgBr was added dropwise to a THF solution of III (R² = R⁴ = Me, R³ = H), at 0° and the reaction mixture was further stirred at room temperature for 1 h to give 90% II (R¹ = R² = Me, R³ = H).

IT 124629-61-4P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of, by Grignard reaction of (hydrocarbylsulfonyl)cyanopyrazines with (hydrocarbyl or heterocyclyl) halides)

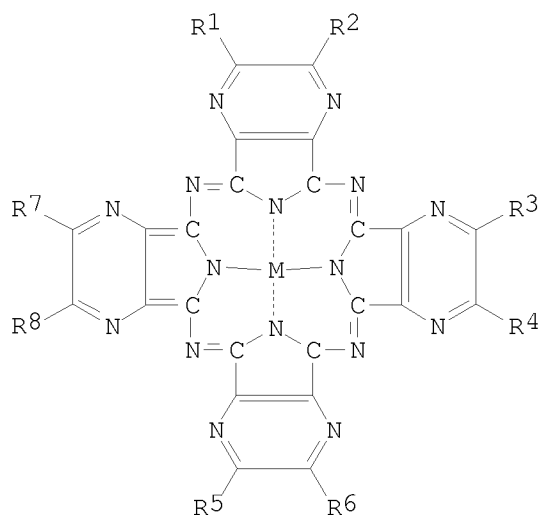
RN 124629-61-4 CAPLUS
 CN Pyrazinecarbonitrile, 3-methyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



L4 ANSWER 107 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1989:564314 CAPLUS
 DOCUMENT NUMBER: 111:164314
 TITLE: Optical recording materials
 INVENTOR(S): Sakamoto, Mare; Miyazaki, Shuji; Ezaki, Shigeyuki
 PATENT ASSIGNEE(S): Toyo Ink Mfg. Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01034791	A	19890206	JP 1987-332801	19871228
JP 2514677	B2	19960710		
PRIORITY APPLN. INFO.:			JP 1987-88108	A1 19870410
OTHER SOURCE(S):	MARPAT	111:164314		

GI



I

AB Phthalocyanine derivs. of the structure I (R1-R8 = H, halo, alkyl, aryl, NO2, alkoxy, CO2H, carboxylic ester; the adjacent pairs of R1-R8 may form organic rings; M = H, metal, the oxide or chloride of a metal, or metals bonded to groups (OR9)p, (SR10)q, (OSiR11R12R13)r where R9-R13 = H, aliphatic hydrocarbyl, aromatic hydrocarbyl, aromatic heterocyclyl; p, q, r = 0-2).

These

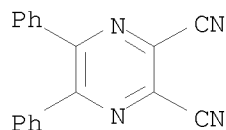
materials have high sensitivity and are manufactured at low cost. Thus, I (R1, R3-R8 = Ph; R2 = H; M = Mn) in Me2CO was applied on polycarbonate disk and dried to obtain a 900-Å layer. Recording upon the disk and then and reading out with 830-nm lasers produced a signal with a sufficiently high signal-to-noise ratio.

IT 52197-23-6

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with metalation, phthalocyanine derivs. for optical recording materials from)

RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)



L4 ANSWER 108 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1989:448088 CAPLUS
DOCUMENT NUMBER: 111:48088
TITLE: Photoconductive coatings and their use as
electrophotographic photoconductors
INVENTOR(S): Ishibashi, Setsuo; Fujio, Katsunori
PATENT ASSIGNEE(S): Alps Electric Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01028646	A	19890131	JP 1987-184244	19870723
PRIORITY APPLN. INFO.:			JP 1987-184244	19870723

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

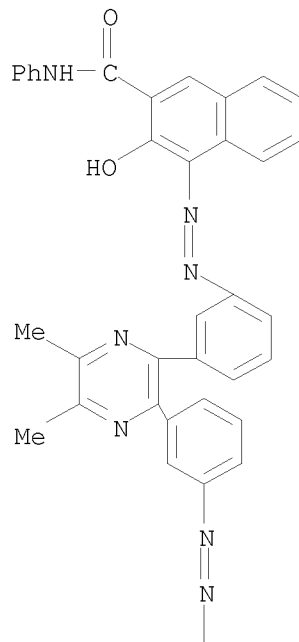
AB The title photoconductors have coating layers containing ≥ 1 bisazo pigment of the structure I [A = II, III, IV, V, CH(COMe)CONR₂; R, R₁, R₂ = H, lower alkyl, aryl, alkoxy carbonyl, aryloxy carbonyl, acyl, halo, monovalent organic residue; X = benzene ring-condensable atomic group forming (substituted) hydrocarbon rings or aromatic heterocycles; Y = CONR₂, CO₂R]. Thus, a coating containing the bisazo pigment VI, butyral resin, and iso-PrOH was applied on an Al plate to give a charge-generating layer, which was overcoated with a composition containing the hydrazone VII to give a photoconductor having high sensitivity.

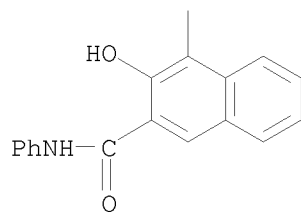
IT 121519-58-2 121519-59-3
 RL: USES (Uses)
 (electrophotog. photoconductor with charge-generating layer containing)

RN 121519-58-2 CAPLUS

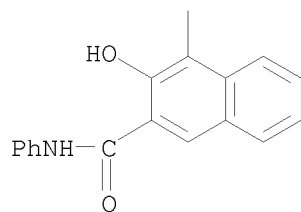
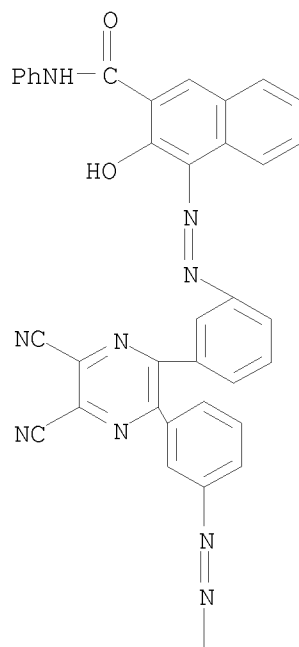
CN 2-Naphthalenecarboxamide, 4,4'-[(5,6-dimethyl-2,3-pyrazinediyl)bis(3,1-phenyleneazo)]bis[3-hydroxy-N-phenyl- (9CI) (CA INDEX NAME)]

PAGE 1-A



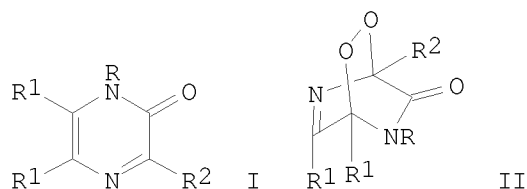


RN 121519-59-3 CAPLUS
 CN 2-Naphthalenecarboxamide, 4,4'-[(5,6-dicyano-2,3-pyrazinediyl)bis(3,1-phenyleneazo)]bis[3-hydroxy-N-phenyl- (9CI) (CA INDEX NAME)]



L4 ANSWER 109 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1989:423476 CAPLUS
 DOCUMENT NUMBER: 111:23476
 TITLE: Synthesis of stable 3,6-epidioxypyrazin-2-ones and α -oxo imides by photooxygenation of pyrazin-2-ones with singlet oxygen

AUTHOR(S): Nishio, Takehiko; Tokunaga, Naoko; Kondo, Masaji;
Omote, Yoshimori
CORPORATE SOURCE: Dep. Chem., Univ. Tsukuba, Tsukuba, 305, Japan
SOURCE: Journal of the Chemical Society, Perkin Transactions
1: Organic and Bio-Organic Chemistry (1972-1999)
(1988), (11), 2921-5
CODEN: JCPRB4; ISSN: 0300-922X
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 111:23476
GI



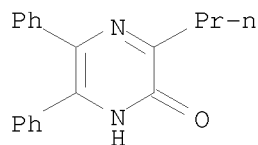
AB Irradiation of the pyrazin-2-ones I (R = Me, R₁ = Ph, R₂ = MeEt, Ph, CH Me₂, Ph; R = R₁ = R₂ = Me; R = R₂ = Et, R₁ = Ph) in MeOH under O gave the 3,6-epidioxypyrazin-2-ones II (same R's) N-alkyl-N-acyl- α -oxo amides, and the unusual products, N-alkyl- α -acyloxy- α -methoxy amides. The mechanism for the form of these photoproducts is discussed. Furthermore, thermal or photochem. treatment of the 3,6-epidioxypyrazinones II, which could be readily obtained by the reaction of I and singlet O, gave the N-alkyl-N-acyl- α -oxo amides and this reaction would provide a useful synthetic method for the α -oxo imides.

IT 104369-40-6

RL: RCT (Reactant); RACT (Reactant or reagent)
(alkylation of)

RN 104369-40-6 CAPLUS

CN 2(1H)-Pyrazinone, 5,6-diphenyl-3-propyl- (CA INDEX NAME)

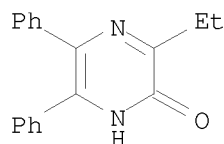


IT 104369-39-3P 108981-53-9P 120106-61-8P

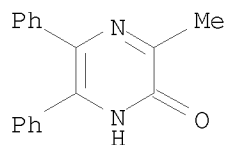
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 104369-39-3 CAPLUS

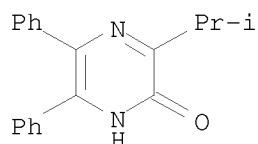
CN 2(1H)-Pyrazinone, 3-ethyl-5,6-diphenyl- (CA INDEX NAME)



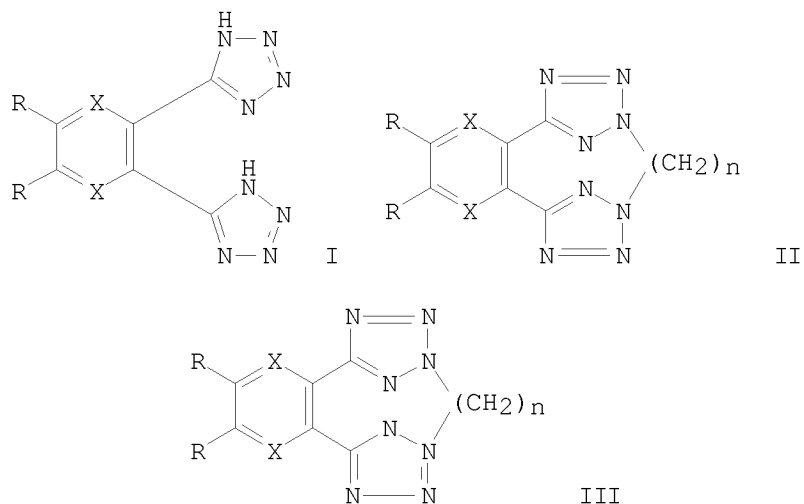
RN 108981-53-9 CAPLUS
CN 2(1H)-Pyrazinone, 3-methyl-5,6-diphenyl- (CA INDEX NAME)



RN 120106-61-8 CAPLUS
CN 2(1H)-Pyrazinone, 3-(1-methylethyl)-5,6-diphenyl- (CA INDEX NAME)



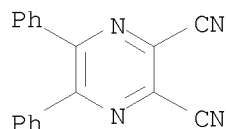
L4 ANSWER 110 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1989:75459 CAPLUS
DOCUMENT NUMBER: 110:75459
TITLE: Synthesis of substituted heterocyclic cyclophanes
AUTHOR(S): Ried, W.; Aboul-Fetouh, S.
CORPORATE SOURCE: Inst. Org. Chem., Univ. Frankfurt/Main, Frankfurt,
Fed. Rep. Ger.
SOURCE: Tetrahedron (1988), 44(11), 3399-404
CODEN: TETRAB; ISSN: 0040-4020
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 110:75459
GI



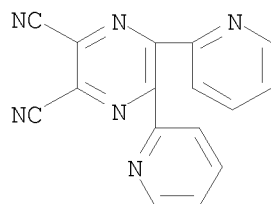
AB The reaction of tetrazoles I (X = CH, R = H; X = N, R = H, Me, Ph, 2-pyridyl) with Br(CH₂)_n Br (n = 5, 6, 7, 8, 10) in the presence of Et₃N gave the corresponding sym. and asym. cyclophanes II and III, which were separated by column chromatog. The crystal structures of II (X = N, R = Me, n = 7) and III (X = N, R = Me n = 7) were determined

IT 52197-23-6 118553-90-5
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with sodium azide and ammonium chloride, tetrazole derivative from)

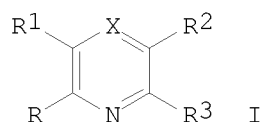
RN 52197-23-6 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)



RN 118553-90-5 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-di-2-pyridinyl- (CA INDEX NAME)



L4 ANSWER 111 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1987:439748 CAPLUS
 DOCUMENT NUMBER: 107:39748
 TITLE: Cross-coupling reaction of chloropyrazines with acetylenes
 AUTHOR(S): Akita, Yasuo; Inoue, Akira; Ohta, Akihiro
 CORPORATE SOURCE: Tokyo Coll. Pharm., Tokyo, 192-03, Japan
 SOURCE: Chemical & Pharmaceutical Bulletin (1986), 34(4), 1447-58
 CODEN: CPBTAL; ISSN: 0009-2363
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 107:39748
 GI



AB Various chloropyrazines I (R = Cl; R₁, R₃ = alkyl, Ph, Cl; R₂ = H, Ph, Cl; X = N, NO) were subjected to cross-coupling reaction with acetylenes, such as phenylacetylene, 1-hexyne and propargyl alc., in the presence of

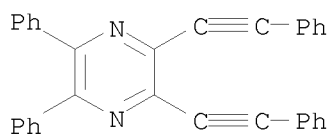
palladium catalysts, to give the corresponding coupling products in good yields. It was found that Pd(PPh₃)₄ can catalyze the reaction of chloroalkylpyrazines, and that a combination of Pd(PPh₃)₂Cl₂ and CuI preferentially catalyzes the reaction of chlorophenylpyrazines.

IT 75163-70-1P 109192-23-6P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

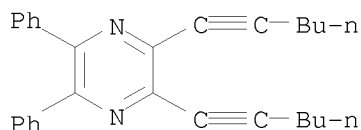
RN 75163-70-1 CAPLUS

CN Pyrazine, 2,3-diphenyl-5,6-bis(2-phenylethynyl)- (CA INDEX NAME)



RN 109192-23-6 CAPLUS

CN Pyrazine, 2,3-di-1-hexynyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



L4 ANSWER 112 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1987:111426 CAPLUS

DOCUMENT NUMBER: 106:111426

TITLE: Chromogenic compounds for pressure-sensitive and thermal copying processes

INVENTOR(S): Hall, Nigel

PATENT ASSIGNEE(S): Imperial Chemical Industries PLC, UK

SOURCE: Eur. Pat. Appl., 52 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

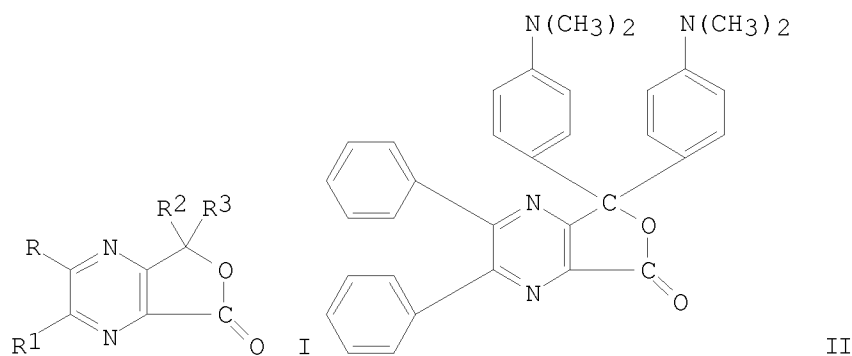
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
EP 192328	A1	19860827	EP 1986-300305	19860117
EP 192328	B1	19900509		
R: CH, DE, FR, GB, IT, LI				
JP 61195164	A	19860829	JP 1986-31036	19860217
PRIORITY APPLN. INFO.:			GB 1985-4631	A 19850222
OTHER SOURCE(S):	MARPAT	106:111426		

GI



AB Chromogenic pyrazine derivs. I [R, R1 = H, alkenyl, alkoxy, aryl, etc. provided that R and R1 are not H at the same time; R2 and R3 = heterocyclic ring having aryl group annealed through a conjugated N linkage a homocyclic aryl group having substituent NR4R5; R4, R5 = H, R4 and R5 together with the N to which they are joined may form an heterocyclic ring provided R4 and R5 = H at the same time] are described for thermal recording materials and pressure-sensitive copying papers with improved lightfastness. Thus, a thermal recording paper was prepared by coating with a composition containing II and bisphenol A as developer to give green

colored images with excellent lightfastness.

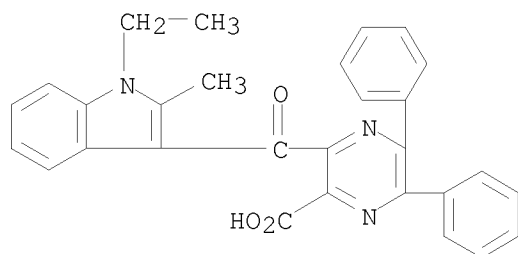
IT 105490-93-5P 105490-95-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and reaction of, in preparation of chromogenic pyrazine derivative)

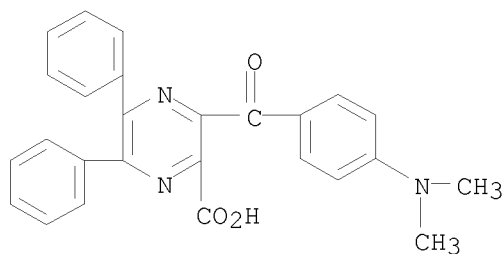
RN 105490-93-5 CAPLUS

CN Pyrazinecarboxylic acid, 3-[(1-ethyl-2-methyl-1H-indol-3-yl)carbonyl]-5,6-diphenyl- (9CI) (CA INDEX NAME)



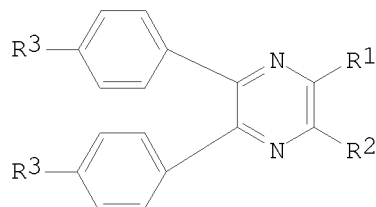
RN 105490-95-7 CAPLUS

CN Pyrazinecarboxylic acid, 3-[4-(dimethylamino)benzoyl]-5,6-diphenyl- (9CI) (CA INDEX NAME)

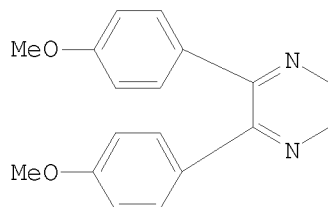


L4 ANSWER 113 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1987:102321 CAPLUS
 DOCUMENT NUMBER: 106:102321
 TITLE: Pyrazine derivatives
 INVENTOR(S): Wakabayashi, Toshio; Hasegawa, Hirokazu; Ohta, Akihiro
 PATENT ASSIGNEE(S): Terumo Corp., Japan
 SOURCE: Eur. Pat. Appl., 30 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 194686	A1	19860917	EP 1986-103407	19860313
EP 194686	B1	19891220		
R: BE, CH, DE, FR, GB, IT, LI, NL, SE				
JP 62005970	A	19870112	JP 1986-48560	19860307
JP 62270564	A	19871124	JP 1986-279871	19860307
JP 06015533	B	19940302		
JP 63010768	A	19880118	JP 1986-279872	19861126
JP 05015707	B	19930302		
US 4788197	A	19881129	US 1988-170692	19880314
PRIORITY APPLN. INFO.:			JP 1985-52115	A 19850315
			JP 1986-48560	A1 19860307
			US 1986-844103	A1 19860314
OTHER SOURCE(S):			CASREACT 106:102321; MARPAT 106:102321	
GI				



I



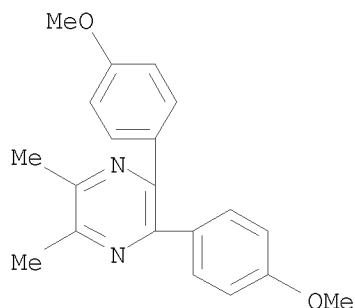
II

AB The title compds. I [R1 = H, alkyl; R2 = alkyl, (substituted) PhCH2, thienylmethyl; R3 = H, halo, alkyl, alkoxy, dialkylamino] were prepared as blood platelet aggregation inhibitors. Thus, dihydropyrazine II was condensed with Me2CO to afford I (R1 = H, R2 = CHMe2, R3 = OMe), which effectively inhibited platelet aggregation with an IC50 of 2.5 + 10-8 M.
 IT 106615-37-6P
 RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of, as platelet aggregation inhibitor and antiinflammatory)

RN 106615-37-6 CAPLUS

CN Pyrazine, 2,3-bis(4-methoxyphenyl)-5,6-dimethyl- (CA INDEX NAME)



L4 ANSWER 114 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1986:533848 CAPLUS

DOCUMENT NUMBER: 105:133848

TITLE: Photooxygenation of N-unsubstituted 2-pyrazinones and alkoxy pyrazines

AUTHOR(S): Nishio, Takehiko; Kondo, Masaji; Omote, Yoshimori

CORPORATE SOURCE: Dep. Chem., Univ. Tsukuba, Sakura, 305, Japan

SOURCE: Journal of the Chemical Society, Perkin Transactions
1: Organic and Bio-Organic Chemistry (1972-1999)
(1985), (11), 2497-9

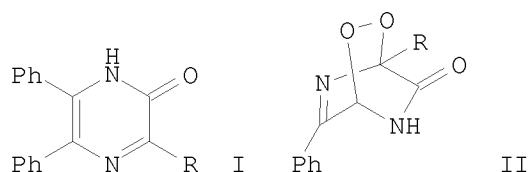
CODEN: JCPRB4; ISSN: 0300-922X

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 105:133848

GI



AB Dye-sensitized photooxygenation of N-unsubstituted pyrazinones I (R = Et, Pr, Ph) afforded the endoperoxides II in 61-72% yield. When heated, II decomposed to give the unsym. imides PhCONHCOCOR accompanied by loss of benzonitrile. 2-Alkoxy pyrazines also reacted with singlet oxygen to yield the endoperoxides.

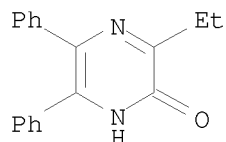
IT 104369-39-3 104369-40-6

RL: PROC (Process)

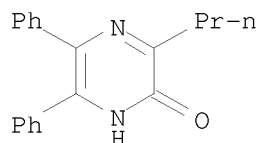
(photooxygenation of)

RN 104369-39-3 CAPLUS

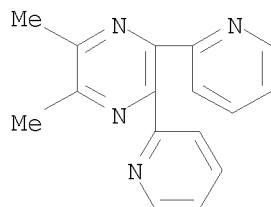
CN 2(1H)-Pyrazinone, 3-ethyl-5,6-diphenyl- (CA INDEX NAME)



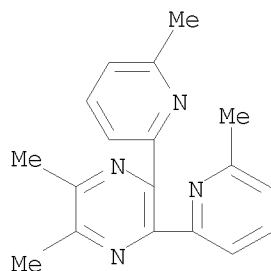
RN 104369-40-6 CAPLUS
 CN 2(1H)-Pyrazinone, 5,6-diphenyl-3-propyl- (CA INDEX NAME)



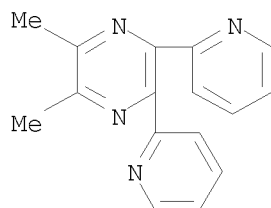
L4 ANSWER 115 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1984:406447 CAPLUS
 DOCUMENT NUMBER: 101:6447
 ORIGINAL REFERENCE NO.: 101:1099a,1102a
 TITLE: IR studies of pyridyl-substituted pyrazine compounds
 AUTHOR(S): Khuhawar, M. Y.
 CORPORATE SOURCE: Inst. Chem., Univ. Sind, Jamshoro, Pak.
 SOURCE: Pakistan Journal of Scientific and Industrial Research
 (1983), 26(5), 301-7
 CODEN: PSIRAA; ISSN: 0030-9885
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB The IR of 22 title compds., as CCl4 solns., nujol mulls, and KBr discs are assigned.
 IT 89684-66-2 89684-67-3
 RL: PRP (Properties)
 (IR of)
 RN 89684-66-2 CAPLUS
 CN Pyrazine, 2,3-dimethyl-5,6-bis(6-methyl-2-pyridinyl)- (CA INDEX NAME)



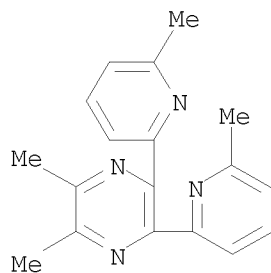
RN 89684-67-3 CAPLUS
 CN Pyrazine, 2,3-dimethyl-5,6-bis(6-methyl-2-pyridinyl)- (CA INDEX NAME)



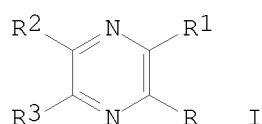
L4 ANSWER 116 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1984:164538 CAPLUS
 DOCUMENT NUMBER: 100:164538
 ORIGINAL REFERENCE NO.: 100:24937a,24940a
 TITLE: Infrared studies of pyridyl-substituted pyrazine compounds
 AUTHOR(S): Khuhawar, M. Y.
 CORPORATE SOURCE: Inst. Chem., Univ. Sind, Jamshoro, Pak.
 SOURCE: Journal of Pure and Applied Sciences (1983), 2(1), 9-17
 CODEN: JPASEQ; ISSN: 0255-3643
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB IR spectra of 22 pyridyl-substituted pyrazine and dihydropyrazine compds. were studied by using CCl₄ solution, nujol mull and KBr disk techniques. Different regions of strong absorption are recognized and the characteristic absorptions are assigned.
 IT 89684-66-2 89684-67-3
 RL: PRP (Properties)
 (IR spectrum of)
 RN 89684-66-2 CAPLUS
 CN Pyrazine, 2,3-dimethyl-5,6-di-2-pyridinyl- (CA INDEX NAME)



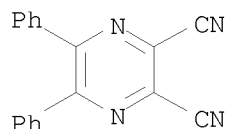
RN 89684-67-3 CAPLUS
 CN Pyrazine, 2,3-dimethyl-5,6-bis(2-pyridinyl)- (CA INDEX NAME)



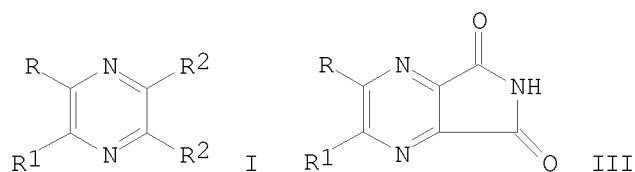
L4 ANSWER 117 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1982:142801 CAPLUS
 DOCUMENT NUMBER: 96:142801
 ORIGINAL REFERENCE NO.: 96:23489a,23492a
 TITLE: Introduction of a cyano group in pyrazine
 AUTHOR(S): Akita, Yasuo; Shimazaki, Makoto; Ohta, Akihiro
 CORPORATE SOURCE: Tokyo Coll. Pharm., Tokyo, 192-03, Japan
 SOURCE: Synthesis (1981), (12), 974-5
 CODEN: SYNTBF; ISSN: 0039-7881
 DOCUMENT TYPE: Journal
 LANGUAGE: German
 GI



AB Refluxing a mixture of I (R = Cl, R1 = R3 = Me2CHCH2, R2 = H) with KCN in DMF containing Pd(PPh3)4 for 2.5 h followed by treatment with H2O gave I (R = cyano, R1 = R3 = Me2CHCH2, R2 = H) in 77% yield. Similarly prepared were 10 addnl. cyanopyrazines (I, R = cyano; R1, R3 = H, Ph, Me, Me2CH, cyano; R2 = Ph, H, cyano) in 16-98% yields.
 IT 52197-23-6P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
 RN 52197-23-6 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)



L4 ANSWER 118 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1982:68939 CAPLUS
 DOCUMENT NUMBER: 96:68939
 ORIGINAL REFERENCE NO.: 96:11329a,11332a
 TITLE: Synthesis of pyrazinedicarboximides from diaminomaleonitrile
 AUTHOR(S): Tsuda, Tadataka; Fujishima, Katsuhiko; Ueda, Hiroo
 CORPORATE SOURCE: Coll. Agric., Univ. Osaka Prefect., Osaka, 591, Japan
 SOURCE: Agricultural and Biological Chemistry (1981), 45(9), 2129-30
 CODEN: ABCHA6; ISSN: 0002-1369
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 96:68939
 GI

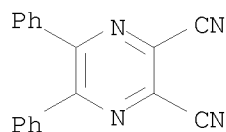


AB Hydrolysis of pyrazines I (R = H, Me, Ph, 4-ClC₆H₄, 3,4-Cl₂C₆H₃, 4-MeOC₆H₄; R₁ = H, Me, Ph; R₂ = CN), prepared from diaminomaleonitrile, followed by esterification gave I (R₂ = CO₂Me)(II). Amidn. of II with NH₃ followed by intramol. cyclocondensation gave the title compds. (III). II (R = Ph, R₁ = H, R₂ = CO₂Me) showed bactericidal activity superior to that of phenazine oxide.

IT 52197-23-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (hydrolysis of)

RN 52197-23-6 CAPLUS

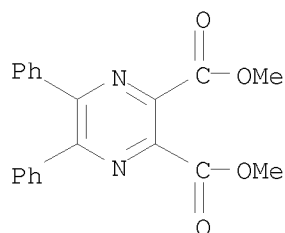
CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)



IT 80356-81-6P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and amidation of)

RN 80356-81-6 CAPLUS

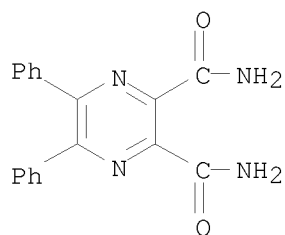
CN 2,3-Pyrazinedicarboxylic acid, 5,6-diphenyl-, dimethyl ester (9CI) (CA INDEX NAME)



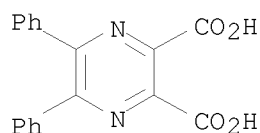
IT 80356-91-8P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and cyclization of, pyridinedicarboximide from)

RN 80356-91-8 CAPLUS

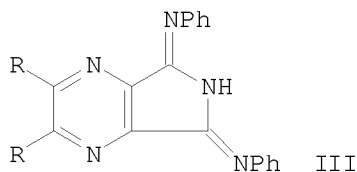
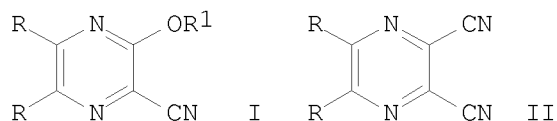
CN 2,3-Pyrazinedicarboxamide, 5,6-diphenyl- (CA INDEX NAME)



IT 53954-53-3P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (preparation and esterification of)
 RN 53954-53-3 CAPLUS
 CN 2,3-Pyrazinedicarboxylic acid, 5,6-diphenyl- (CA INDEX NAME)



L4 ANSWER 119 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1980:586294 CAPLUS
 DOCUMENT NUMBER: 93:186294
 ORIGINAL REFERENCE NO.: 93:29698h,29699a
 TITLE: One-step preparation of 3-alkoxypyrazine-2-
 carbonitriles from pyrazine-2,3-dicarbonitriles and
 related reactions
 AUTHOR(S): Kojima, Takakazu; Nagasaki, Fumihiko; Ohtsuka, Yozo
 CORPORATE SOURCE: Fine Chem. Res. Lab., Nippon Soda Co. Ltd., Odawara,
 250-02, Japan
 SOURCE: Journal of Heterocyclic Chemistry (1980), 17(3), 455-9
 CODEN: JHTCAD; ISSN: 0022-152X
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 93:186294
 GI



AB Disubstituted alkoxy pyrazine carbonitriles I (R = Ph, H, 1,8-C10H6,

9,10-phenanthrenediyl; R1 = alkyl) were prepared from the pyrazinedicarbonitriles II by direct substitution with alcs. Treatment of II with amines gave either pyrrolopyrazines III (R = H, Ph) or substitution products. In a low temperature range, II afforded imidates and related compds. The preference among these reactions depended on the 5,6-substituents and on the reaction conditions.

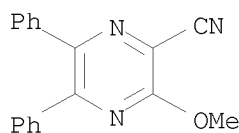
IT 75018-08-5P 75018-09-6P 75018-10-9P

75018-11-0P 75018-18-7P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

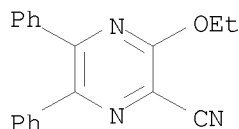
RN 75018-08-5 CAPLUS

CN Pyrazinecarbonitrile, 3-methoxy-5,6-diphenyl- (9CI) (CA INDEX NAME)



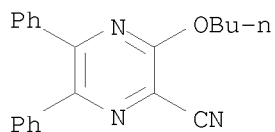
RN 75018-09-6 CAPLUS

CN Pyrazinecarbonitrile, 3-ethoxy-5,6-diphenyl- (9CI) (CA INDEX NAME)



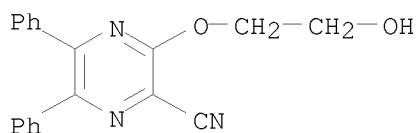
RN 75018-10-9 CAPLUS

CN Pyrazinecarbonitrile, 3-butoxy-5,6-diphenyl- (9CI) (CA INDEX NAME)



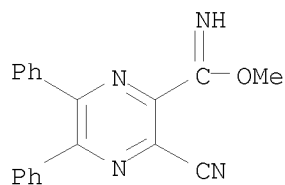
RN 75018-11-0 CAPLUS

CN Pyrazinecarbonitrile, 3-(2-hydroxyethoxy)-5,6-diphenyl- (9CI) (CA INDEX NAME)

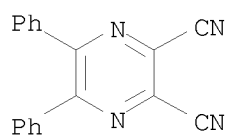


RN 75018-18-7 CAPLUS

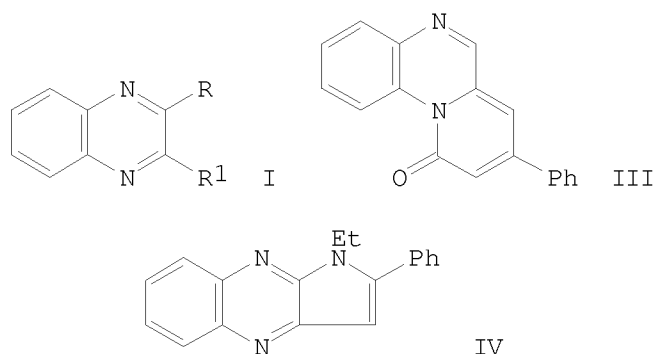
CN Pyrazinecarboximidic acid, 3-cyano-5,6-diphenyl-, methyl ester (9CI) (CA INDEX NAME)



IT 52197-23-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (substitution reaction of, with alcs.)
 RN 52197-23-6 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)



L4 ANSWER 120 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1980:568226 CAPLUS
 DOCUMENT NUMBER: 93:168226
 ORIGINAL REFERENCE NO.: 93:26791a,26794a
 TITLE: Alkynyl- and dialkynylquinoxalines. Synthesis of condensed quinoxalines
 AUTHOR(S): Ames, Donald E.; Brohi, M. Ismail
 CORPORATE SOURCE: Chem. Dep., Chelsea Coll., London, SW3 6LX, UK
 SOURCE: Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999) (1980), (7), 1384-9
 CODEN: JCPRB4; ISSN: 0300-922X
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 93:168226
 GI



AB Condensation of 2-chloro- and 2,3-dichloroquinoxalines I (R = Cl, R1 = H, Cl) with alk-1-yne in the presence of (Ph3P)2PdCl2 and CuI gave mono- and

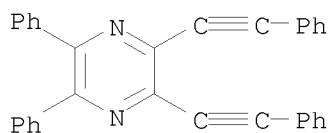
dialkynylquinoxalines I (R = alkynyl, R1 = H, alkynyl) (II). Addition of amines to II gave stable enamines, and hydration of II gave 2'-oxoalkyl compds. existing predominantly in the enol form due to intramol. H bonding, e.g. I [R = CH:C(OH)Ph, R1 = H]. Condensation of II with CH2(CO2Et)2 and related compds. gave pyrido[1,2-a]quinoxalin-4-ones. (e.g. III). Pyrrolo[2,3-b]quinoxalines (e.g. IV) were prepared from I (R = alkynyl, R1 = Cl).

IT 75163-70-1P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 75163-70-1 CAPLUS

CN Pyrazine, 2,3-diphenyl-5,6-bis(2-phenylethynyl)- (CA INDEX NAME)



L4 ANSWER 121 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1980:471806 CAPLUS

DOCUMENT NUMBER: 93:71806

ORIGINAL REFERENCE NO.: 93:11685a,11688a

TITLE: Cyanopyrazinecarboxylic acid esters

INVENTOR(S): Tomita, Nobuo; Genda, Yoshikazu; Ito, Masaru

PATENT ASSIGNEE(S): Nippon Soda Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

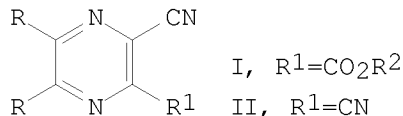
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 55002638	A	19800110	JP 1978-74890	19780622
JP 62018553	B	19870423		
PRIORITY APPLN. INFO.:			JP 1978-74890	A 19780622

GI



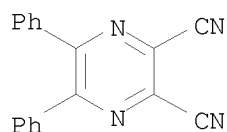
AB Title esters I (R, R2 = H, Me; H, Et; Me, Me; Me, Et; Ph, Me) were prepared by reaction of II with R2OH in the presence of alkali followed by treatment with aqueous mineral acids. Thus, 5 mL N aqueous NaOH was added to a mixture of 2.6 g II (R = H) and 400 mL MeOH at 0°, the whole kept 1 h at -3° to -5°, made pH 3 with 3 mL 19% HCl, and the whole stirred 3 h at room temperature to give 2.5 g I (R = H, R2 = Me).

IT 52197-23-6

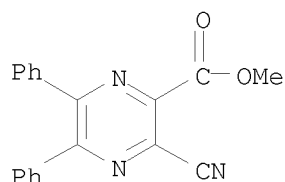
RL: RCT (Reactant); RACT (Reactant or reagent)
(hydrolysis and esterification of)

RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)



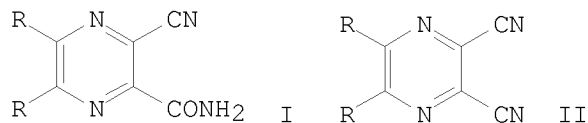
IT 74402-61-2P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
 RN 74402-61-2 CAPLUS
 CN Pyrazinecarboxylic acid, 3-cyano-5,6-diphenyl-, methyl ester (9CI) (CA
 INDEX NAME)



L4 ANSWER 122 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1980:446712 CAPLUS
 DOCUMENT NUMBER: 93:46712
 ORIGINAL REFERENCE NO.: 93:7730h,7731a
 TITLE: Pyrazinecyanocarboxamides
 INVENTOR(S): Genda, Yoshikazu; Tomita, Nobuo; Ito, Masaru; Kano,
 Saburo
 PATENT ASSIGNEE(S): Nippon Soda Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

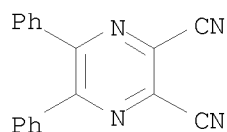
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 54154776	A	19791206	JP 1978-63655	19780527
JP 61056230	B	19861201		
PRIORITY APPLN. INFO.:			JP 1978-63655	A 19780527

GI

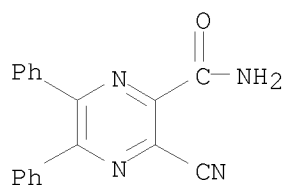


AB Title compds. I (R = H, Me, Ph) were prepared by treating II with HCl and
 AcOH. Thus, stirring a mixture of 5 g II, 40 mL 35% HCl, and 5 mL AcOH for
 3 h 15 min at 30-5° gave 86.1% I (R = H).
 IT 52197-23-6
 RL: RCT (Reactant); RACT (Reactant or reagent)

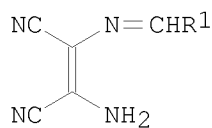
(hydrolysis of)
 RN 52197-23-6 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)



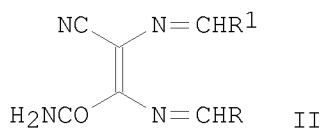
IT 66371-68-4P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
 RN 66371-68-4 CAPLUS
 CN Pyrazinecarboxamide, 3-cyano-5,6-diphenyl- (9CI) (CA INDEX NAME)



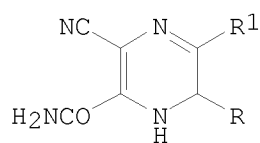
L4 ANSWER 123 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1980:41887 CAPLUS
 DOCUMENT NUMBER: 92:41887
 ORIGINAL REFERENCE NO.: 92:6993a,6996a
 TITLE: Chemistry of diaminomaleonitrile. 5. Dihydropyrazine synthesis
 AUTHOR(S): Ohtsuka, Yozo; Tohma, Eiko; Kojima, Sigeru; Tomita, Nobuo
 CORPORATE SOURCE: Sagami Chem. Res. Cent., Sagamihara, 229, Japan
 SOURCE: Journal of Organic Chemistry (1979), 44(26), 4871-6
 CODEN: JOCEAH; ISSN: 0022-3263
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 92:41887
 GI



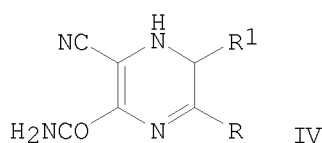
I



II



III



IV

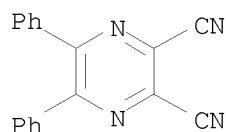
AB Condensation of RCHO (R = optionally substituted Ph) with Schiff bases I (R1 = optionally substituted Ph, CHMe2) in the presence of NEt3 <20° is accompanied by regiospecific hydration of the nitrile groups to give 3-cyanoacrylamide derivs. II, which cyclize readily into 1,2-dihydropyrazines III and IV. The substituent effect on the product ratio is examined, and the reaction mechanism is discussed in terms of a new general reaction pattern of diaminomaleonitrile derivative Reactions of III and IV by oxidation, reduction, hydantoin formation with isocyanates, and cyanoethylation are also reported.

IT 52197-23-6

RL: RCT (Reactant); RACT (Reactant or reagent)
(hydrolysis of)

RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)



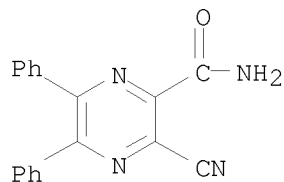
IT 66371-68-4P 71871-19-7P 71871-20-0P

71871-22-2P 71871-23-3P 71871-24-4P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

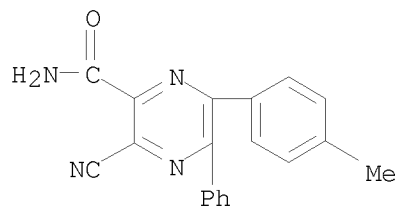
RN 66371-68-4 CAPLUS

CN Pyrazinecarboxamide, 3-cyano-5,6-diphenyl- (9CI) (CA INDEX NAME)



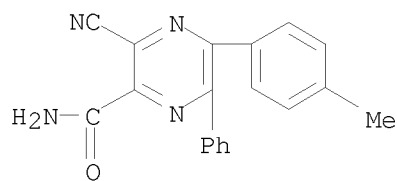
RN 71871-19-7 CAPLUS

CN Pyrazinecarboxamide, 3-cyano-6-(4-methylphenyl)-5-phenyl- (9CI) (CA INDEX NAME)

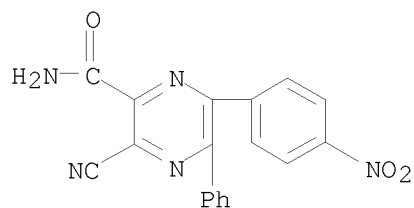


RN 71871-20-0 CAPLUS

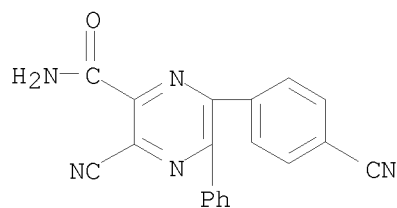
CN Pyrazinecarboxamide, 3-cyano-5-(4-methylphenyl)-6-phenyl- (9CI) (CA INDEX NAME)



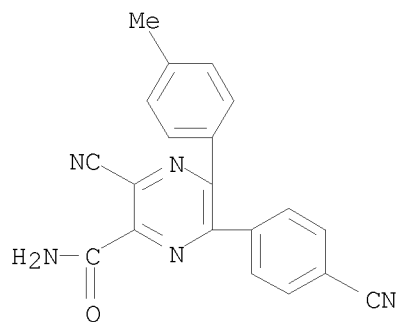
RN 71871-22-2 CAPLUS
 CN Pyrazinecarboxamide, 3-cyano-6-(4-nitrophenyl)-5-phenyl- (9CI) (CA INDEX NAME)



RN 71871-23-3 CAPLUS
 CN Pyrazinecarboxamide, 3-cyano-6-(4-cyanophenyl)-5-phenyl- (9CI) (CA INDEX NAME)



RN 71871-24-4 CAPLUS
 CN Pyrazinecarboxamide, 3-cyano-6-(4-cyanophenyl)-5-(4-methylphenyl)- (9CI) (CA INDEX NAME)



L4 ANSWER 124 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1979:507952 CAPLUS
 DOCUMENT NUMBER: 91:107952
 ORIGINAL REFERENCE NO.: 91:17423a,17426a
 TITLE: Biphenylenes. XXXI. Condensation of benzocyclobutene-1,2-dione with aliphatic and

AUTHOR(S) :

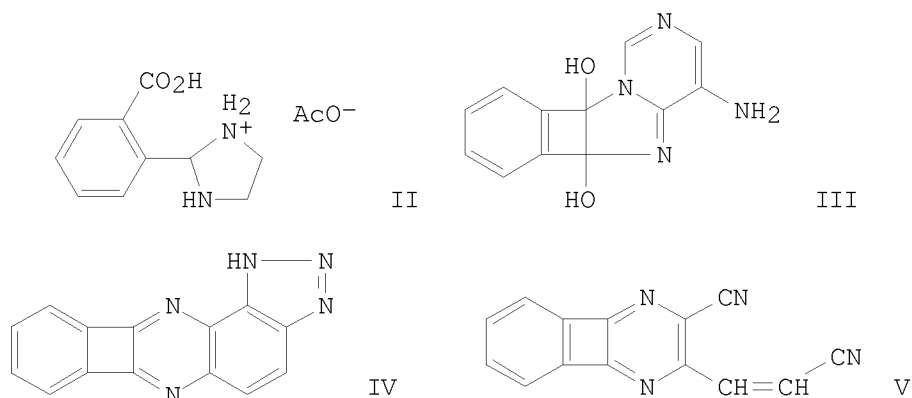
CORPORATE SOURCE:
SOURCE:

DOCUMENT TYPE:
LANGUAGE:
OTHER SOURCE(S):
GI

heterocyclic 1,2-diamines and the synthesis of
cis-2-cyano-3-(2'-cyanovinyl)1,4-diazabiphenylene
Barton, John W.; Goodland, Michael C.; Gould, Ken J.;
McOmie, John F. W.; Mound, W. Roderick; Saleh, Sadiq
A.

Sch. Chem., Univ. Bristol, Bristol, UK
Tetrahedron (1979), 35(2), 241-7
CODEN: TETRAB; ISSN: 0040-4020

Journal
English
CASREACT 91:107952



AB Condensation of benzocyclobutene-1,2-dione (I) with the title diamines did not, except in the case of 4,5-diaminobenzotriazole, give 1,4-diazabiphenylenes, but gave a variety of products, six of which were derivs. of new heterocyclic systems. E.g., I with ethylenediamine and 4,5-diaminopyrimidine gave 69% imidazolium acetate II and 83% diol III, resp. I with 4,5-diaminobenzotriazole gave 80% pentaazaindenobiphenylene IV which on N-amination and Pb(OAc)₄ oxidation gave 2.5% diazabiphenylene V.

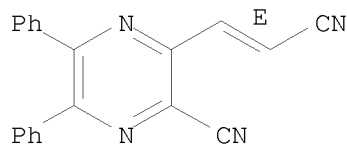
IT 71209-25-1P 71209-26-2P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 71209-25-1 CAPLUS

CN Pyrazinecarbonitrile, 3-(2-cyanoethenyl)-5,6-diphenyl-, (E)- (9CI) (CA
INDEX NAME)

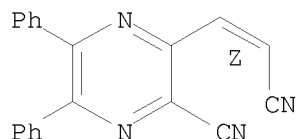
Double bond geometry as shown.



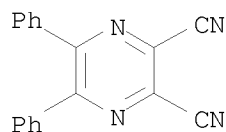
RN 71209-26-2 CAPLUS

CN Pyrazinecarbonitrile, 3-(2-cyanoethenyl)-5,6-diphenyl-, (Z)- (9CI) (CA
INDEX NAME)

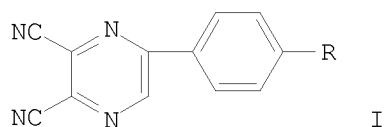
Double bond geometry as shown.



L4 ANSWER 125 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1979:455695 CAPLUS
 DOCUMENT NUMBER: 91:55695
 ORIGINAL REFERENCE NO.: 91:9015a,9018a
 TITLE: Negative ion mass spectra of cyano substituted heterocycles
 AUTHOR(S): Holzmann, G.; Rothkopf, H. W.
 CORPORATE SOURCE: Inst. Org. Chem., Free Univ. Berlin, Berlin, Fed. Rep. Ger.
 SOURCE: Organic Mass Spectrometry (1978), 13(11), 636-41
 CODEN: ORMSBG; ISSN: 0030-493X
 DOCUMENT TYPE: Journal
 LANGUAGE: German
 AB The neg. ion mass spectra are reported of 21 dicyano heteroarom. compds. The spectra are useful for the anal. of isomeric compds. All the compds. fragment to give [(CN)₂]^{•-}, [C₄N₃]⁻, or [C₄N₄]^{•-} ions. The ion structures were identified using metastable transitions and collisional activation spectra. The fragmentations of tetracyano compds. are explained by rearrangement processes of mol. anions.
 IT 52197-23-6
 RL: PRP (Properties)
 (neg. ion mass spectrum of)
 RN 52197-23-6 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)



L4 ANSWER 126 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1978:563542 CAPLUS
 DOCUMENT NUMBER: 89:163542
 ORIGINAL REFERENCE NO.: 89:25349a,25352a
 TITLE: Synthesis of new pyrazine compounds from diaminomaleonitrile
 AUTHOR(S): Tsuda, Tadataka; Ueda, Hiroo
 CORPORATE SOURCE: Coll. Agric., Univ. Osaka Prefect., Sakai, Japan
 SOURCE: Nippon Nogei Kagaku Kaishi (1978), 52(5), 213-17
 CODEN: NNKKA; ISSN: 0002-1407
 DOCUMENT TYPE: Journal
 LANGUAGE: Japanese
 OTHER SOURCE(S): CASREACT 89:163542
 GI



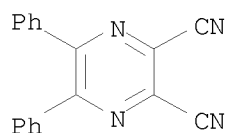
AB Pyrazines I (R = OH, OMe, OEt, Me, Et, Cl, I, H, NO₂, Br) were prepared by the reaction of diaminomaleonitrile with 4-RC₆H₄COCHO, which were prepared by the oxidation of acetophenones with SeO₂ in dioxane. Similarly, 5,6-disubstituted derivs. of dicyanopyrazine were prepared I (R = H, Br) had a slight fungicide activity.

IT 52197-23-6P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)



L4 ANSWER 127 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1978:171793 CAPLUS

DOCUMENT NUMBER: 88:171793

ORIGINAL REFERENCE NO.: 88:27075a,27078a

TITLE: 1,2-Dihydropyrazine derivatives

INVENTOR(S): Ohtsuka, Yozo; Ito, Masaru; Tomita, Nobuo

PATENT ASSIGNEE(S): Nippon Soda Co., Ltd., Japan; Sagami Chemical Research Center

SOURCE: Ger. Offen., 48 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

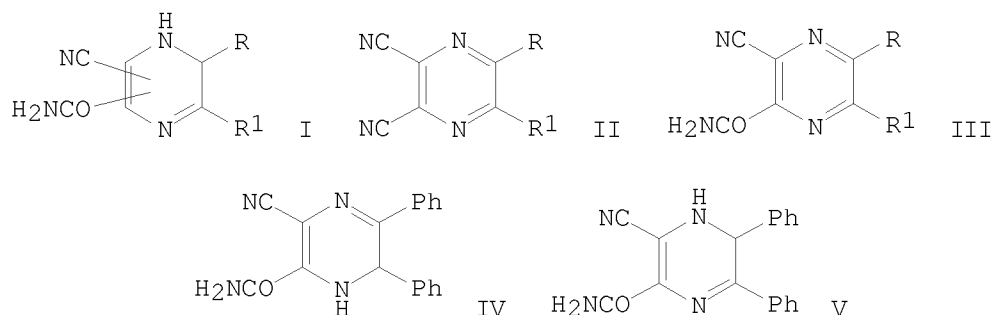
LANGUAGE: German

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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DE 2736230	A1	19780216	DE 1977-2736230	19770811
JP 53022529	A	19780302	JP 1976-96020	19760813
JP 57045260	B	19820927		
PRIORITY APPLN. INFO.:			JP 1976-96020	A 19760813

GI



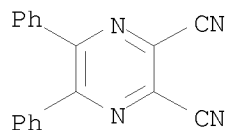
AB Title compds. (I; R, R1 = Ph, condensed aromatic, or heterocyclic groups), fast yellow dyes showing a green to yellow luminescence, are prepared (a) by condensing $\text{RCH:NC(CN):C(CN)NH}_2$ with R_1CHO in the presence of base to give $\text{RCH:NC(CN):C(CONH}_2\text{)N:CHR}_1$, followed by ring closure, or (b) by selective hydrolysis of II to III, followed by selective reduction. Thus, reaction of $\text{PhCH:NC(CN):C(CN)NH}_2$ [56029-18-6] with PhCHO [100-52-7] in EtOH containing Et3N gave $\text{PhCH:NC(CN):C(CONH}_2\text{)N:CHPh}$ [66371-72-0], which was cyclized by heating with Me2SO to form a mixture of IV [66371-73-1] and V [66371-74-2]. The IV-V mixture, resolvable by fractional recrystn., showed (Japanese standard test K 5101) a brilliant greenish yellow tone, solvent stability 4-5 (1 lowest, 5 highest), and water stability 5, and lightfastness (Fade-O-meter) 7-8.

IT 52197-23-6

RL: RCT (Reactant); RACT (Reactant or reagent)
(hydrolysis of, selective, by hydrogen peroxide)

RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)

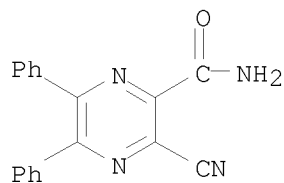


IT 66371-68-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and selective reduction of)

RN 66371-68-4 CAPLUS

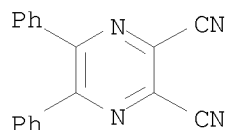
CN Pyrazinecarboxamide, 3-cyano-5,6-diphenyl- (9CI) (CA INDEX NAME)



ORIGINAL REFERENCE NO.: 83:32479a,32482a
 TITLE: 5,8-Diaminopyrazino[2,3-d]pyridazines and analogous fused pyridazines
 INVENTOR(S): Kawamoto, Nobuo; Okubo, Atsuo; Yamazaki, Hideo; Akihiro, Kazuo; Nitani, Kiyooki
 PATENT ASSIGNEE(S): Mitsui Toatsu Chemicals, Inc., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

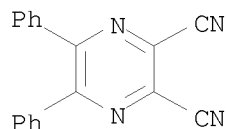
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 50052090	A	19750509	JP 1973-102626	19730913

PRIORITY APPLN. INFO.: JP 1973-102626 A 19730913
 GI For diagram(s), see printed CA Issue.
 AB Fused pyridazines I (X = NHCR:N, NHN:N, SCH2CHRS, N:CR1CR1:N, NHCONH, NHCOCONH; R = H, C1-4-alkyl, Ph; R1 = Me, Ph) are prepared by treating dinitriles II with N2H4. I are agricultural fungicides. Thus, 16.9 g 5,6-dicyano-2,3-diphenylpyrazine was refluxed with 3.5 g N2H4.H2O in dioxane-EtOH 1 hr to give 2.9 g I (X = N:CPhCPh:N). Also prepared were I (X = N:CMcMe:N, NHN:N, NHCH:N, SCH2CH2S).
 IT 52197-23-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (cyclization of, with hydrazine, diaminoheteroazopyridazines from)
 RN 52197-23-6 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)

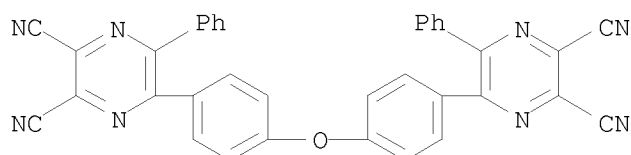


L4 ANSWER 129 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1975:477905 CAPLUS
 DOCUMENT NUMBER: 83:77905
 ORIGINAL REFERENCE NO.: 83:12235a,12238a
 TITLE: Mass spectra of heteroaromatic nitriles
 AUTHOR(S): Holzmam, G.; Rothkopf, H. W.; Mueller, R.; Woehrle, D.
 CORPORATE SOURCE: Inst. Org. Chem., Freie Univ. Berlin, Berlin, Fed. Rep. Ger.
 SOURCE: Organic Mass Spectrometry (1975), 10(2), 97-115
 CODEN: ORMSBG; ISSN: 0030-493X
 DOCUMENT TYPE: Journal
 LANGUAGE: German
 AB The fragmentation mechanisms of 19 di- and tetracyanopyrazines were studied by electron-impact and field ionization mass spectroscopy, using high resolution and metastable anal. In the 5,6-dialkyl- and diaryl-2,3-dicyanopyrazines ring cleavage was most important, with minor loss of the CN groups. Annulation in the 5,6-positions led to loss of CN and (CN)2 with no ring cleavage. Similar fragmentations were observed for the tetracyano analogs. Comparison of the spectra with those of 5-membered heterocycles containing 4 CN groups showed that CN loss depended on the aromaticity of the ring system.
 IT 52197-23-6 55408-55-4

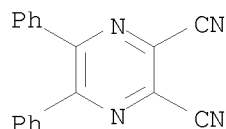
RL: PRP (Properties)
(mass spectrum of)
RN 52197-23-6 CAPLUS
CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)



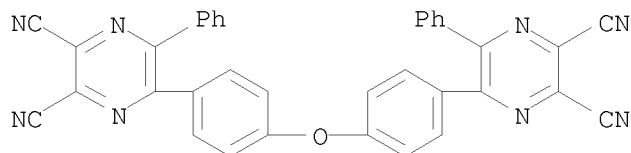
RN 55408-55-4 CAPLUS
CN 2,3-Pyrazinedicarbonitrile, 5,5'-(oxydi-4,1-phenylene)bis[6-phenyl- (9CI)
(CA INDEX NAME)



L4 ANSWER 130 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1975:156218 CAPLUS
DOCUMENT NUMBER: 82:156218
ORIGINAL REFERENCE NO.: 82:24936h,24937a
TITLE: Di- and tetracyanopyrazines
AUTHOR(S): Rothkopf, Hans W.; Woehrle, Dieter; Mueller, Reinhardt; Kossmehl, Gerhard
CORPORATE SOURCE: Inst. Org. Chem., Freie Univ. Berlin, Berlin, Fed. Rep. Ger.
SOURCE: Chemische Berichte (1975), 108(3), 875-86
CODEN: CHBEAM; ISSN: 0009-2940
DOCUMENT TYPE: Journal
LANGUAGE: German
OTHER SOURCE(S): CASREACT 82:156218
GI For diagram(s), see printed CA Issue.
AB Diaminomaleonitrile reacts with di- and tetraketones and oxoaldehydes RCOCOR1 (I, R = H, Me, Ph; R1 = H, Me, Ph) to give cyanopyrazines II. When I is 9,10-phenanthrenequinone, III is formed. Other I, such as 1,8-phenanthroline-9,10-quinone, N-acetylisatin, 4,5:9,10-pyrenediquinone, etc., were also used to give polycyclic II. RC(:NOH)COR1 (R = H, Me; R1 = Ph) could be used instead of I. [HN:C(CN)]2 cyclizes with di- and tetramines 4,5-RR1C6H2(NH2)2-1,2 to give 2,3-dicyanoquinoxalines IV (R = H, Me, NO2, CO2H; R1 = H, Me), V, and VI. Some dicyanopyrazines cyclize with NH3 to give aminoimino-5H-pyrrolo[3,4-b]pyrazines VII (R = Me, Ph; R1 = H, Me; RR1 = CH:CHCH:CH).
IT 52197-23-6P 55408-55-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 52197-23-6 CAPLUS
CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)



RN 55408-55-4 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,5'-(oxydi-4,1-phenylene)bis[6-phenyl- (9CI)
 (CA INDEX NAME)



L4 ANSWER 131 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1975:58411 CAPLUS

DOCUMENT NUMBER: 82:58411

ORIGINAL REFERENCE NO.: 82:9355a,9358a

TITLE: Thermooxidative degradation of polyquinoxalines and related model compounds

AUTHOR(S): Kane, James J.; Ghosh, Subrata; Conley, Robert T.

CORPORATE SOURCE: Dep. Chem., Wright State Univ., Dayton, OH, USA

SOURCE: Papers presented at [the] Meeting - American Chemical Society, Division of Organic Coatings and Plastics Chemistry (1973), 33(1), 466-73
 CODEN: ACOCAO; ISSN: 0096-512X

DOCUMENT TYPE: Journal

LANGUAGE: English

GI For diagram(s), see printed CA Issue.

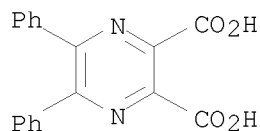
AB Solution oxidation by aqueous alkaline permanganate of model compds. for the poly(etherquinoxaline) (I) [52885-62-8] showed that the carbocyclic ring adjacent to the heterocyclic pyrazine ring was more susceptible to oxidation. 2-Phenylquinoxaline [5021-43-2] gave 2-phenylpyrazine-5,6-dicarboxylic acid [39784-64-0], and similarly, 2,3-diphenylpyrazine-5,6-dicarboxylic acid [53954-53-3] was prepared from 2,3-diphenylquinoxaline [1684-14-6], 2,2',3,3'-tetraphenyl-6,6'-biquinoxaline [16111-01-6], 2,2',3,3'-tetraphenyl-6,6'-oxydiquinoxaline [16478-99-2], and 2,3-diphenylbenzo[g]quinoxaline [36305-72-3]. Pyrolytic oxidation of phenylquinoxalines gave products similar to those obtained from benzimides, suggesting that benzheterocyclic systems underwent oxidative degradation by similar mechanisms, with initial oxygenation of the carbocyclic ring adjacent to the heterocyclic one. Catalytic oxidation of the quinoxaline system involved oxygenated intermediates similar to pyrazine dicarboxylic acids. Nitrile absorptions were observed in ir spectra of oxidative pyrolysis products of I films.

IT 53954-53-3P

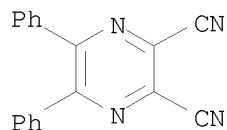
RL: FORM (Formation, nonpreparative); PREP (Preparation)
 (formation of, on oxidation of phenylquinoxalines)

RN 53954-53-3 CAPLUS

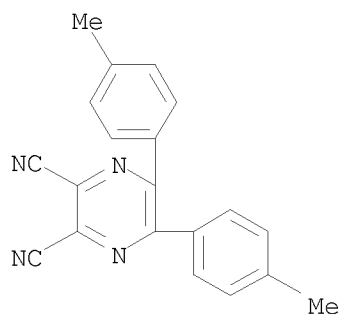
CN 2,3-Pyrazinedicarboxylic acid, 5,6-diphenyl- (CA INDEX NAME)



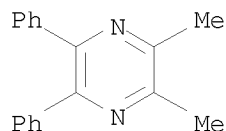
L4 ANSWER 132 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1974:120864 CAPLUS
 DOCUMENT NUMBER: 80:120864
 ORIGINAL REFERENCE NO.: 80:19455a,19458a
 TITLE: Synthesis of potential antineoplastic agents. XXIV.
 Reaction of diaminomaleonitrile with 1,2-diones
 AUTHOR(S): Popp, Frank D.
 CORPORATE SOURCE: Dep. Chem., Clarkson Coll. Technol., Potsdam, NY, USA
 SOURCE: Journal of Heterocyclic Chemistry (1974), 11(1), 79-82
 CODEN: JHTCAD; ISSN: 0022-152X
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 GI For diagram(s), see printed CA Issue.
 AB Diaminomaleonitrile (I) was cyclocondensed with 1,2-diones RCOCOR1 to
 yield dicyanipyrazine derivs. (II). I with glyoxal gave
 $\text{H}_2\text{NC}(\text{CN})\text{:C}(\text{CN})\text{N:CH}_2$ which cyclized to II ($\text{R} = \text{R}_1 = \text{H}$).
 1,2-Cyclohexanedione and I gave III. I with Ac_2CH_2 gave IV and with
 indandione gave V. Other examples are described.
 IT 52197-23-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (condensation of, with hydrazine)
 RN 52197-23-6 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)



IT 52197-13-4P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
 RN 52197-13-4 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-methylphenyl)- (CA INDEX NAME)

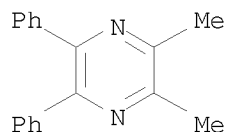


L4 ANSWER 133 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1973:124176 CAPLUS
 DOCUMENT NUMBER: 78:124176
 ORIGINAL REFERENCE NO.: 78:19947a,19950a
 TITLE: Photodecarbonylation of β -styryl isocyanates
 AUTHOR(S): Boyer, J. H.; Mikol, G. J.
 CORPORATE SOURCE: Chem. Dep., Univ. Illinois, Chicago, IL, USA
 SOURCE: Journal of Heterocyclic Chemistry (1972), 9(6),
 1325-30
 CODEN: JHTCAD; ISSN: 0022-152X
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 GI For diagram(s), see printed CA Issue.
 AB Ph-CH:CRNCO (I, R = H, Me, Ph) underwent both extensive polymerization and the loss of CO upon irradiation at 254 nm in cyclohexane. The formation of 2,5-diphenylpyrazine and indole (II R = H) from I (R = H) and 2,3-dimethyl-5,6-diphenylpyrazine and I (R = Me) provided diagnostic evidence for styryl nitrene intermediates. The formation of PhCHRCN (R = H, Me) was assigned to an initial rearrangement of the residue, C8H6(R)N: into a ketenimine concerned with the elimination of CO from I. Isomerization then produced a nitrile. I (R = Ph) gave no product requiring the intermediacy of a nitrene and (or) an azirine. The formation of 2,3,4,5-tetraphenylpyrrole was assigned to a dimerization of the isocyanate concerted with or following the elimination of CO and HCN, and the formation of 3-phenylisocarbostyryl was assigned to a ring-closure of the isocyanate in an excited triplet state. Each isocyanate gave stilbene and trace amounts of oxidative fragmentation into PhCHO and benzonitrile. Solvent participation produced benzylcyclohexane and bicyclohexyl. Two unidentified solids, C17H14N2O and C12H14N2O, were obtained from I (R = Me).
 IT 36697-41-3P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
 RN 36697-41-3 CAPLUS
 CN Pyrazine, 2,3-dimethyl-5,6-diphenyl- (CA INDEX NAME)

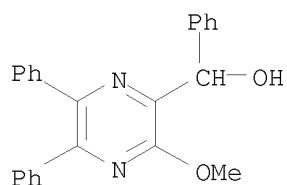


L4 ANSWER 134 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1972:434067 CAPLUS
 DOCUMENT NUMBER: 77:34067
 ORIGINAL REFERENCE NO.: 77:5667a,5670a
 TITLE: Photo-induced decarbonylation of β -styryl isocyanates
 AUTHOR(S): Mikol, G. J.; Boyer, J. H.
 CORPORATE SOURCE: Dep. Chem., Univ. Ill., Chicago, IL, USA
 SOURCE: Journal of the Chemical Society, Chemical Communications (1972), (8), 439
 CODEN: JCCCAT; ISSN: 0022-4936
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 GI For diagram(s), see printed CA Issue.
 AB Irradiation of β -styryl isocyanates released the elements of CO and gave products formally derived from rearrangement and dimerization of the residue. E.g., PhCH:CMenCO gave I formally through "head-to-head"

dimerization of PhCH:CMeN or 3-methyl-2-phenyl-2H-azirine.
 IT 36697-41-3P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
 RN 36697-41-3 CAPLUS
 CN Pyrazine, 2,3-dimethyl-5,6-diphenyl- (CA INDEX NAME)



L4 ANSWER 135 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1963:428532 CAPLUS
 DOCUMENT NUMBER: 59:28532
 ORIGINAL REFERENCE NO.: 59:5158a-b
 TITLE: N-Acyl derivatives of barbiturates. I. Benzoyl derivatives
 AUTHOR(S): Bojarski, Jacek; Kahl, Wladyslaw; Melzacka, Mirosława
 CORPORATE SOURCE: Akad. Med., Krakow, Pol.
 SOURCE: Roczniki Chemii (1962), 36, 1259-62
 CODEN: ROCHAC; ISSN: 0035-7677
 DOCUMENT TYPE: Journal
 LANGUAGE: Unavailable
 AB By heating BzCl 6 hrs. with Ag salts of the resp. barbituric acids in C6H6 solution and in the presence of metallic Na, the following N- and N,N-dibenzoyl derivs. were prepared: 1,3-dibenzoyl-5,5-diallyl- (m. 156-7°), 1,3-dibenzoyl-5-cyclohexenyl-5ethyl- (m. 162-3°); 1,3-dibenzoyl-5,5-diethyl- (n. 235-6°); 1-methyl-3-benzoyl-5-phenyl-5-ethyl- (m. 95-6°); and 1,5-dimethyl-3-benzoyl-5-cyclohexenylbarbituric acid (m. 108-10°).
 IT 95489-49-9
 (Derived from data in the 7th Collective Formula Index (1962-1966))
 RN 95489-49-9 CAPLUS
 CN Pyrazinemethanol, 3-methoxy- α ,5,6-triphenyl- (7CI) (CA INDEX NAME)



L4 ANSWER 136 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1963:428531 CAPLUS
 DOCUMENT NUMBER: 59:28531
 ORIGINAL REFERENCE NO.: 59:5157d-h, 5158a
 TITLE: Synthesis of several derivatives of phenyl(2-hydroxypyrazinyl)carbinol
 AUTHOR(S): Venturella, Vincent S.; Bianculli, J. A.; Sager, R. W.
 CORPORATE SOURCE: Univ. of Pittsburgh, PA
 SOURCE: Journal of Pharmaceutical Sciences (1963), 52, 142-6
 CODEN: JPMSAE; ISSN: 0022-3549
 DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

OTHER SOURCE(S): CASREACT 59:28531

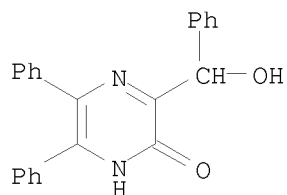
GI For diagram(s), see printed CA Issue.

AB threo-PhCH(OH)CH(NH₂)CO₂Me (I) (0.036 mole), m. 162-3.5° (decomposition), in 300 ml. ethanolic NH₃ at 0° was kept at room temperature for 72 hrs. to give 36% erythro-βphenylserine amide, m. 191-3°. I (15 g.) in absolute MeOH-NH₃ at 0° shaken for 60 hrs. at room temperature gave 3.0 g. α-aminocinnamamide, m. 122-3° (MeOH, C₆H₆). I.HCl (0.022 mole) treated with excess KHCO₃ solution, the solution extracted with EtOAc, the extract dried, cooled, treated with 5 g. KHCO₃ and 3 g. PhCH₂O₂CCl, the suspension stirred in ice for 4 hrs., 15 ml. dry C₅H₅N added, the mixture washed with H₂O, dilute HCl, and H₂O, the organic layer dried, and evaporated to 1/2 volume in vacuo gave 73.5% N-carbobenzoxy-threo-β-phenylserine methyl ester (II), m. 91.5-93° (EtOAc). II (2.5 g.) in 100 ml. absolute MeOH-NH₃ kept at room temperature 40 hrs. gave 2.1 g. N-carbobenzoxy-threo-β-phenylserine amide (III), m. 159-60° (MeOH-H₂O). III (2 g.) in 100 ml. MeOH reduced in a steady stream of H over Pd until CO₂ evolution ceased, the mixture flushed with N, filtered through Celite, the filtrate evaporated, and the residue dried over CaCl₂ gave 90.5 threo-PhCH(OH)CH(NH₂)CONH₂. (IV), m. 144-5° (MeOH-petr. ether). IV (5 g.) in 50 ml. absolute MeOH at -20° treated with 7 g. 30% aqueous (CHO)₂ and 6 ml. 12N NaOH dropwise, the suspension stirred 3 hrs. at -20°, 2 hrs. at room temperature, and acidified with concentrated HCl at 15°. The mixture diluted with 10 ml. H₂O and kept at -20° for 40 hrs. gave 39.4% IVa (R = R₁ = R₂ = H).HCl (V), m. 203-4.5° (decomposition) [EtOH(C)-Et₂O]. Similarly, 0.034 mole IV and 0.032 mole AcCHO followed by neutralization (pH 6.8) with concentrated HCl gave 46.5% IVa (R = R₂ = H, R₁ = Me) (VI), m. 174-6° (decomposition) (Me₂CO); 0.02 mole IV and 0.03 mole Ac₂ gave 33% IVa (R = R₁ = Me, R₂ = H) (VII), m. 181.5-83° (decomposition) (20% aqueous MeOH). IV (0.028 mole), 50 ml. absolute MeOH, and 0.028 mole Bz₂ refluxed and treated dropwise with 4.85 ml. 12N NaOH, the mixture refluxed 30 min., cooled, acidified with concentrated HCl, 1 g. KHCO₃ added, the suspension cooled to 0°, filtered, and the residue washed with H₂O gave 65.8% IVa (R = R₁ = Ph, R₂ = H) (VIII), m. 213 16° (decomposition) (BuOH). V (0.5 g.) in dilute NaOH treated with equimolar Me₂SO₄ at 0°, refluxed 1 hr., refrigerated at 5°, and filtered gave 0.185 g. IVa (R = R₁ = H, R₂ = Me), m. 140-2° (H₂O). Similarly, 2 g. VI gave 0.115g. IVa (R = H, R₁ = R₂ = Me), m. 134.5-6.5°; 0.4 g. VII gave 0.048 g. IVa (R = R₁ = R₂ = Me), m. 110-11.5° (Et₂O-petr. ether); 2 g. VIII gave 0.035 g. IVa (R = R₁ = Ph, R₂ = Me), m. 94.5-6° (decomposition) (aqueous MeOH). IVa are shown to exist predominantly as the pyrazone tautomer and the 2-pyrazinyl position is hindered by the 3-phenylcarbinol moiety.

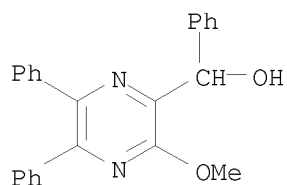
IT 95225-26-6P, Pyrazinemethanol, 3-hydroxy-α,5,6-triphenyl-
95489-49-9P, Pyrazinemethanol, 3-methoxy-α,5,6-triphenyl-
RL: PREP (Preparation)
(preparation of)

RN 95225-26-6 CAPLUS

CN Pyrazinemethanol, 3-hydroxy-α,5,6-triphenyl- (7CI) (CA INDEX NAME)



RN 95489-49-9 CAPLUS
 CN Pyrazinemethanol, 3-methoxy- α ,5,6-triphenyl- (7CI) (CA INDEX NAME)



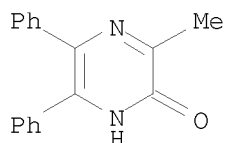
L4 ANSWER 137 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1958:16076 CAPLUS
 DOCUMENT NUMBER: 52:16076
 ORIGINAL REFERENCE NO.: 52:2935i,2936a-d
 TITLE: 2-Hydroxypyrazines
 INVENTOR(S): Hultquist, Martin E.
 PATENT ASSIGNEE(S): American Cyanamid Co.
 DOCUMENT TYPE: Patent
 LANGUAGE: Unavailable
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2805223		19570903	US 1955-488161	19550214

AB Hydroxypyrazines can be prepared by condensing α -amino acid nitriles with dicarbonyl compds. Thus, to 50% NaOH 38 and saturated NaCl solution 30 at 0° is added a mixture of 30% glyoxal (I) 24 and glycine nitrile sulfate 15.4 in ten min., NaCl 25 parts added, the mixture cooled to -10°, and the Na salt (II) of 2-hydroxypyrazine (III) filtered off and washed with cold saturated NaCl. The filter cake, dried at 60°, treated with boiling EtOH, filtered, and the filtrate evaporated to dryness, gives II. To 5N NaOH 20 and ice 10 is added glycine nitrile-HCl (IV) 9.2 parts (volume) and then I 24 parts (weight) at 0-10°, then 5N NaOH 20 parts (volume) in 20 min. to give a pH of 12-13. After 30 min. at 20-30°, and 10 min. at 50°, at a pH of 12-13, 5N NaOH 20 and NaCl 30 parts added, the mixture cooled to 0°, filtered, and the filter cake treated as before, gives parts II 7. To 50% NaOH 9 and H2O 6 are added IV 3 and I 8.5 parts during 10 min. and the precipitate filtered off at -5° and washed with cold saturated NaCl. The cake is slurried with anhydrous EtOH 15 parts (volume) and concentrated HCl added to a pH of 7-7.5. The mixture, filtered, the filtrate evaporated to 1/8 volume, cooled, filtered, washed with EtOH, and dried, gives III, m. 185-8°. Similarly, 5N NaOH 40, IV 18.5, 50% NaOH 16, and diacetyl (V) 20 parts, treated as above and extracted with CHCl3, give 2-hydroxy-5,6-dimethylpyrazine, m. 195-200°.

To 50% NaOH 6 in MeOH 20 (volume) are added benzyl (VI) 4 and IV 1.8 parts, giving, from H₂O, 2-hydroxy-5,6-diphenylpyrazine 4 parts, m. 238-40°. To saturated NaCl 20 (volume) is added α -alanine nitrile (VII) 14 and I 48 and 50% NaOH 21 parts (weight), and the mixture further treated with 50% NaOH 450 parts, giving, from iso-PrOAc, crystalline 2-hydroxy-3-methylpyrazine, m. 150-2°. To VII 14 and V 16 in MeOH 50 (volume) is added 50% NaOH 33 below -10°, the pH adjusted to 7.0-7.5 after 2 hrs. at 20-5°, the solution evaporated to 60 parts (volume) and extracted with CHCl₃, giving, from iso-PrOAc, cream colored 2-hydroxy-3,5,6-trimethylpyrazine, m. 200-1°. VI 21 and VII 7 parts give 2-hydroxy-3-methyl-5,6-diphenylpyrazine, needles, m. 212.5-3.5°. The products are useful in the preparation of dyes and pharmaceuticals.

IT 108981-53-9P, Pyrazinol, 3-methyl-5,6-diphenyl-
 RL: PREP (Preparation)
 (preparation of)
 RN 108981-53-9 CAPLUS
 CN 2(1H)-Pyrazinone, 3-methyl-5,6-diphenyl- (CA INDEX NAME)



L4 ANSWER 138 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1957:34890 CAPLUS
 DOCUMENT NUMBER: 51:34890
 ORIGINAL REFERENCE NO.: 51:6651c-i,6652a-h
 TITLE: Nucleophilic displacements on difunctional pyrazines
 AUTHOR(S): Karmas, George; Spoerri, Paul E.
 CORPORATE SOURCE: Polytech. Inst. of Brooklyn, Brooklyn, NY
 SOURCE: Journal of the American Chemical Society (1957), 79, 680-4

CODEN: JACSAT; ISSN: 0002-7863
 DOCUMENT TYPE: Journal
 LANGUAGE: Unavailable

AB 2-Bromopyrazine (16.6 g.), 5.7 cc. Br, 0.1 cc. PBr₃, and 5 mg. FeBr₃ heated 3 hrs. at 95°, the solid mass hydrolyzed on 200 g. ice layered with 100 cc. Et₂O, the Et₂O layer dried and distilled, and the distillate, b₁₄ 90-110°, recrystd. from 10 cc. MeOH and chilled to -10° yielded 5.5 g. 2,3-dibromopyrazine (I), white prisms, m. 57-8°; 2nd crop, 2.2 g., m. 56-8°. 2,3-Dibromo-5,6-dimethylpyrazine (5.0 g.) in 40 cc. MeOH refluxed 6 hrs. with 0.44 g. Na in 60 cc. absolute MeOH, poured into 600 cc. H₂O, and extracted with pentane gave 3.4 g. 2-bromo-3-methoxy-5,6-dimethylpyrazine, large white prisms, m. 74-5°. 2,3-Dibromo-5,6-diphenylpyrazine (3.2 g.) in 150 cc. dry C₆H₆ refluxed 30 hrs. with 0.20 g. Na in 300 cc. absolute MeOH and evaporated to dryness, and the residue leached with H₂O and recrystd. from 50 cc. Me₂CO yielded 2.4 g. 2-bromo-3-methoxy-5,6-diphenylpyrazine (II), small white prisms, m. 182-3°. 2,5-Dibromo- (III) or 2,5-dichloro-3,6-diphenylpyrazine (IV) (0.0128 mole) and 2.3 g. Na in 160 cc. absolute MeOH or EtOH refluxed 6 hrs. and poured into 700 cc. H₂O gave 90% 2-bromo-5-methoxy-3,6-diphenylpyrazine (V), m. 137-8°, 79% 5-EtO analog (VI) of V, m. 100-1°, and 80% 2-Cl analog of VI, m. 102-3°, resp. I (7.5 g.) and 4.6 g. Na in 200 cc. MeOH refluxed 10 hrs., 150 cc. MeOH distilled, the residue poured into 300 cc. H₂O, and the

product isolated with Et₂O gave 2.1 g. 2,3-dimethoxypyrazine (VII), colorless oil, b₅₀ 108-10°, n_D 1.5133. 2,3-Dichloro-5,6-dimethylpyrazine (VIII) (5 g.) treated with a 10-fold excess of NaOMe in MeOH gave similarly 3.8 g. 2,3-dimethoxy-5,6-dimethylpyrazine (IX), large white prisms, m. 62-3° (from hexane). 5,6-Di-Ph analog of VIII (3 g.) refluxed 12 hrs. with 2.3 g. Na in 200 cc. MeOH and poured into 700 cc. H₂O gave 2.2 g. 5,6-di-Ph analog (X) of IX, small cream flakes, m. 140-1° (from EtOH). 2,5-Dichloro-3,6-dimethylpyrazine (XI) (2.4 g.) and 35 cc. 20% NaOMe in MeOH heated 18 hrs. in a sealed tube at 120°, the mixture washed with MeOH into 300 cc. H₂O, and the product isolated with pentane gave 57% 2,5-dimethoxy-3,6-dimethylpyrazine (XII), b₁₄ 103-4°, m. 63-5° (from pentane). 2-Chloro-5-methoxy-3,6-diphenylhydrazine (3.0 g.) and 30 cc. 20% NaOMe in MeOH heated 20 hrs. in a sealed tube at 135°, the mixture washed with MeOH into 300 cc. H₂O, and the product isolated with CHCl₃ gave 75% 3,6-di-Ph analog (XIII) of XII, yellow needles, m. 146-7°. 2-Methoxy-3-phenyl-5-chloropyrazine (8 g.) refluxed 22 hrs. with 3.0 g. Na in 180 cc. dry BuOH and poured into 200 cc. H₂O and 200 cc. C₆H₆, and the organic layer worked up gave 95% 2-methoxy-3-phenyl-5-butoxypyrazine (XIV), mobile yellow oil, b_{0.3} 137-40°, n_D 1.5608. IX (0.025 mole) and 1.6 g. NaOMe in 50 cc. absolute MeOH heated 40 hrs. at 150-5° in a sealed tube, the mixture washed with MeOH into 300 cc. H₂O, the alkaline solution concentrated to 100

cc.,

acidified with HCl and chilled at 0°, and the crystalline deposit recrystd. from 300 cc. Me₂CO yielded 71% 2-hydroxy-3-methoxy-5,6-dimethylpyrazine (XV), long white prisms, m. 234-5°. X gave similarly 71% 5,6-di-Ph analog of XV, m. 266-8° (from Me₂CO). XII (3.3 g.) and 20 cc. 20% NaOMe in MeOH heated 24 hrs. at 150° in a sealed tube, the mixture washed with MeOH into 300 cc. H₂O, neutralized with CO₂, and extracted with CHCl₃, and the extract worked up gave 63% 2-hydroxy-5-methoxy-3,6-dimethylpyrazine (XVI), long white needles, m. 180-1° (from 150 cc. Me₂CO). XIII (2.4 g.) and 27 cc. 20% MeONa in MeOH processed in the usual manner and the product isolated with PhMe gave 74% 3,6-di-Ph analog of XVI, small yellow prisms, m. 194-6° (from 25 cc. Me₂CO). XIV (9.0 g.) and 54 cc. 20% NaOMe in MeOH heated 12 hrs. at 150° in a sealed tube, the mixture washed into 600 cc. 1% aqueous NaOH, the solution washed with Et₂O, and neutralized with CO₂, the tacky

precipitate

dissolved in CHCl₃, the solution evaporated, the residue dissolved in 15 cc.

hot

heptane, and the solution kept 4 days at 23° yielded 0.5 g. 2-hydroxy-5-methoxy-6-phenylpyrazine (XVII), m. 205-7° (from EtOAc and heptane), and 2.6 g. 2-hydroxy-3-phenyl-5-butoxypyrazine, very viscous oil, b_{0.01} 135-40°. 2,5-Dimethoxy-3-phenylpyrazine (9.0 g.), 37 cc. 20% NaOMe in MeOH heated 18 hrs. in a sealed tube at 150°, washed into 400 cc. 1% aqueous NaOH, washed with Et₂O, and neutralized with CO₂, and the precipitate dissolved in 300 cc. warm Me₂CO, filtered, and

concentrated to

40 cc. gave 2.2 g. 6-Ph analog of XVII, m. 208-9° (from 40 cc. Me₂CO). VII (2.0 g.) and 60 cc. 42% HBr refluxed 15 min. and evaporated in vacuo, and the residue recrystd. from 250 cc. H₂O yielded 1.3 g. 2,3-dihydroxypyrazine (XVIII), light gray flat prisms, did not melt below 300°; also prepared in 50% yield by acid hydrolysis of 1,2-di(N⁴-acetylsulfanilyl)pyrazine. XII (1.8 g.) and 25 cc. 20% NaOMe in MeOH heated 40 hrs. in a sealed tube at 175°, poured into 180 cc. warm (60°) H₂O, cooled to 25°, filtered, and acidified with 8.0 cc. AcOH, and the precipitate recrystd. by extraction from a Soxhlet

thimble with

MeOH yielded 1.0 g. 3,6-di-Me derivative of XVIII, small yellow granules, did not melt below 300°; the alkaline solution of the cleavage products from a similar run neutralized with CO₂ during several hrs., and the precipitate

heated

12 hrs. with POCl₃ at 170° gave XI. XIII (1.0 g.) and 20 cc. NaOMe in MeOH heated 60 hrs. in a sealed tube at 182°, poured into 180 cc. H₂O, warmed to 80°, cooled to 40°, filtered, and neutralized with CO₂, and the precipitate dissolved in 750 cc. hot Me₂CO and boiled down rapidly to 50 cc. gave 0.85 g. 3,6-di-Ph derivative (XIX) of XVIII, bronze flakes, m. 295-300° (decomposition). XIX heated 40 hrs. at 180° with POCl₃ gave IV. XIII (1.0 g.), 50 cc. AcOH, and 50 cc. 42% HBr refluxed 15 min., concentrated in vacuo, dissolved in warm 1% aqueous

NaOH,

filtered, and neutralized with CO₂ yielded 0.1 g. XIX, m. 295-300° (decomposition) (from Me₂CO). III (4.0 g.) and 16 g. CuCN in 60 cc. dry 4-picoline refluxed 7 hrs., poured into 1000 cc. 4N HCl, treated with 500 cc. CHCl₃, warmed to 40°, stirred 10 min., and filtered, the CHCl₃ phase concentrated, the tarry residue distilled, the pasty distillate (2.5 g.), b_{0.01} 170-220°, refluxed 9 days in 100 cc. EtOH containing 16 g. KOH, the solution diluted with 500 cc. H₂O, neutralized with CO₂, filtered, and acidified with HCl, and the precipitate recrystd. from AcOH yielded 1.0 g. 2-hydroxy-5-carboxy-3,6-diphenylpyrazine, yellow prisms, m. 264-5° (with evolution of CO₂) resolidified and rem. 292-4°. II (2 g.) refluxed 3 hrs. with 1.5 g. CuCN in 40 cc. dry 4-picoline, the hot solution poured with stirring into 500 cc. cold 3N HCl and 100 cc. CHCl₃, stirred 15 min., and filtered, the filter residue washed with 100 cc. CHCl₃, the combined CHCl₃ solns. evaporated, and the residue recrystd. from 25 cc. EtOH gave 1.3 g. 2-hydroxy-3-cyano-5,6-diphenylpyrazine (XX), long yellow prisms, m. 230-2°. XX (1 g.) refluxed 7 hrs. in 50 cc. 15% aqueous KOH, diluted with 200 cc. H₂O, acidified with HCl, and extracted with CHCl₃,

and

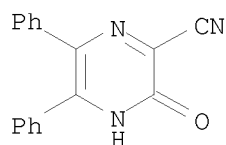
the extract worked up gave 0.7 g. 3-CO₂H analog of XX, yellow granules, m. 225-7° (with evolution of CO₂ to form 2-hydroxy-5,6-diphenylpyrazine, m. 239-40°).

IT 34121-78-3P, Pyrazinonitrile, 3-hydroxy-5,6-diphenyl-
34226-38-5P, Pyrazinoic acid, 3-hydroxy-5,6-diphenyl-
108981-61-9P, Pyrazinol, 3-methoxy-5,6-diphenyl-
132726-33-1P, Pyrazine, 2,3-dimethoxy-5,6-diphenyl-
RL: PREP (Preparation)

(preparation of)

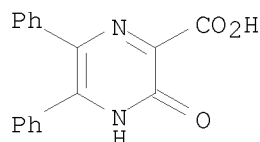
RN 34121-78-3 CAPLUS

CN Pyrazinecarbonitrile, 3-hydroxy-5,6-diphenyl- (8CI) (CA INDEX NAME)



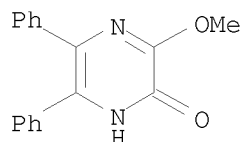
RN 34226-38-5 CAPLUS

CN Pyrazinecarboxylic acid, 3,4-dihydro-3-oxo-5,6-diphenyl- (9CI) (CA INDEX NAME)

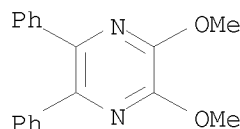


RN 108981-61-9 CAPLUS

CN Pyrazinol, 3-methoxy-5,6-diphenyl- (6CI) (CA INDEX NAME)



RN 132726-33-1 CAPLUS
 CN Pyrazine, 2,3-dimethoxy-5,6-diphenyl- (CA INDEX NAME)



L4 ANSWER 139 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1957:21717 CAPLUS
 DOCUMENT NUMBER: 51:21717
 ORIGINAL REFERENCE NO.: 51:4363h-i, 4364a-g
 TITLE: Reactions of tetrameric hydrocyanic acid
 AUTHOR(S): Brederick, Hellmut; Schmotzer, Gunter
 CORPORATE SOURCE: Tech. Hochschule, Stuttgart, Germany
 SOURCE: Ann. (1956), 600, 95-108
 DOCUMENT TYPE: Journal
 LANGUAGE: Unavailable
 OTHER SOURCE(S): CASREACT 51:21717

GI For diagram(s), see printed CA Issue.

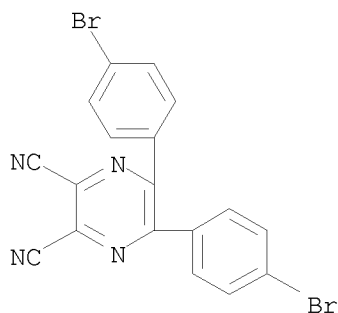
AB cf. preceding abstract. (HCN)₄ (I) (0.85 g.) and 2.5 g. (p-BrCH₄CO)₂ were refluxed 1 hr. with 10 cc. glacial AcOH in 50 cc. AcOBu giving 1.7 g. 2,3-di(p-bromophenyl)-5,6-dicyanopyrazine (II), m. 208°. Similarly formed from (4-PhOC₆H₄CO)₂ was 2,3-di(p-phenoxyphenyl)-5,6-dicyanopyrazine, m. 203-4°. I (3.2 g.) and 4.4 g. isatin in 100 cc. EtOH and 7.5 cc. glacial AcOH refluxed 1 hr. gave 6.5 g. C₆H₄.NH.CO.C:NC(CN):C(NH₂) CN (III), carmine needles, m. 200° (from MeOH), which crystallized from EtOH giving III.EtOH, orange, losing EtOH at 100° in vacuo over P₂O₅. I (1 g.) was shaken to complete solution with 10 cc. absolute HCO₂H, warmed 5 min. (not above 35°), cooled, and poured into 30 cc. Et₂O giving 0.63 g. HCONHC(CN):C(CN)NH₂ (IV), m. 182° (from 5 cc. H₂O). I (2.5 g.) shaken with 10 cc. Ac₂O gave 2.6 g. N-Ac analog (V) of IV, C₆H₆ON₄, m. 161° (from H₂O). AcCl and I in dioxane gave the HCl salt of V, m. 140° (from EtOH by addition of Et₂O), converted into V by neutralization with aqueous NaHCO₃. I (5 g.) 120 cc. dry dioxane, and 60 cc. Ac₂O refluxed 6 hrs., concentrated in vacuo to

15-20

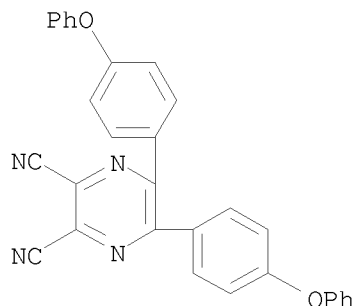
cc., and kept at 0° gave 4.1 g. "triacetate" (cf. preceding abstract), 1-acetyl-2-acetoxy-2-methyl-4,5-dicyano-1,2-dihydroimidazole (VI), m. 191°. When a tech. grade of dioxane was used in this reaction and the mother liquors from VI (15 cc.) were diluted with 15 cc. H₂O, about 0.055 g. "diacetate B" (VII), C₈H₈O₂N₄; m. 174-6° (from anisole) was isolated. Due to the small amount the structure of VII was not proved, but the IR spectrum (given in the preceding article) indicates that it contains a heterocyclic ring. V (1 g.) refluxed 6 hrs. with 10 cc. Ac₂O and 25 cc. dioxane gave 0.44 g. V. VI (1 g.) heated 20 min. with 10 cc. 0.1N NaOH and 15 cc. H₂O gave 0.72 g. (AcNHC(CN):)₂, "diacetate A," m. 222°, also formed in 31% yield by heating 2 g. I 3 hrs. with 25 cc. Ac₂O and 40 cc. dioxane, adding 20 cc. glacial AcOH, refluxing 1/2 hr., evaporating to 10 cc., and keeping 48 hrs. at 0°. I (1 g.)

condensed with 1.7 g. ClCO_2Ph in 30 cc. boiling anisole gave 1.2 g. $\text{PhO}_2\text{CNHC}(\text{CN})\text{:C}(\text{CN})\text{NH}_2$, m. 177° (from 50% EtOH). To 3 g. $(\text{COCl})_2$ in dioxane were added dropwise 1.2 g. I in 15 cc. dioxane, cooled, and stirred, giving 0.7 g. 2,3-dioxo-5,6-dicyano-1,2,3,4-tetrahydropyrazine, decomposing about 270° (from little H_2O). I (5.5 g.) in 100 cc. absolute EtOH was refluxed 25 min. with 6.3 g. $\text{MeC}(\text{OEt})\text{:NH}_3\text{Cl}$, cooled, filtered from NH_4Cl , concentrated and extracted with dry Et₂O giving 7.5 g. (crude) $\text{MeC}(\text{OEt})\text{:NC}(\text{CN})\text{:C}(\text{NH}_2)\text{CN}$ (VIII), m. 90° (from anisole, by addition of petr. ether at 0°), which hydrolyzed with H_2O gave I, m. 183° (the only m.p. of I given in this series). VIII (2 g.) refluxed 9 hrs. in 40 cc. anisole, filtered hot and cooled to 0° gave 0.75 g. 2-methyl-4,5-dicyanoimidazole, m. 228° (from H_2O after treatment with C). 4,5-Dicyanoimidazole (2.4 g.) in 20 cc. dry dioxane and 1.5 cc. EtOH with dry HCl gave 3.7 g. crude $\text{N:CH.NH.C}(\text{CN})\text{:C.C}(\text{OEt})\text{:NH.HCl}$ (IX), m. $160\text{--}70^\circ$, purified by solution in cold HCO_2H and addition of EtOH. IX (2 g.) refluxed with 25 cc. H_2O and active C gave 1 g. $\text{N:CH.NH.C}(\text{CN})\text{:CCO}_2\text{Et}$, m. 185° . $\text{NH.N:N.C}(\text{CN})\text{:CR}$ (IXa) R = CN (1.19 g.) in 10 cc. dry dioxane and 1 g. absolute EtOH, cooled, with 0.8 g. HCl gas gave (after 2 months) at 0° , 1.4 g. of the HCl salt of IXa [R = $\text{C:NH}(\text{OEt}).\text{HCl}$], decompose about 210° , 1.25 g. of which boiled with 5 cc. H_2O gave 0.6 g. IXa (R = CO_2Et), m. $112\text{--}14^\circ$ (from Et₂O followed by CHCl_3 containing CCl_4). 4,5-R(CN)₂ (R = 4-imidazolin-2-one radical) (10 g.) in 150 cc. dioxane and 7 cc. EtOH, cooled, with HCl gas gave 15.5 g. 4,5-NCRC(:NH)OEt.HCl, decompose about 300° (from $\text{HCO}_2\text{H}\text{--Et}_2\text{O}$), which when hydrolyzed gave 81% 4,5-NCRCO₂Et, m. 205° (from H_2O). 5,6-R'(CN)₂ (R' = 2,3-dimethylpyrazine radical) similarly gave 85% 5,6-NCR'C-(:NH)OEt.HCl, m. $225\text{--}7^\circ$ (from $\text{HCO}_2\text{H}\text{--Et}_2\text{O}$), which on hydrolysis gave 77% 5,6-NCR'CO₂Et, m. 99° .

IT 101579-12-8P, 2,3-Pyrazinedicarbonitrile, 5,6-bis(p-bromophenyl)-
 103165-51-1P, 2,3-Pyrazinedicarbonitrile, 5,6-bis(p-phenoxyphenyl)-
 RL: PREP (Preparation)
 (preparation of)
 RN 101579-12-8 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(4-bromophenyl)- (CA INDEX NAME)



RN 103165-51-1 CAPLUS
 CN 2,3-Pyrazinedicarbonitrile, 5,6-bis(p-phenoxyphenyl)- (6CI) (CA INDEX NAME)



L4 ANSWER 140 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1956:74065 CAPLUS

DOCUMENT NUMBER: 50:74065

ORIGINAL REFERENCE NO.: 50:13941g-i,13942a-i,13943a-c

TITLE: 2-Bromopyrazines, 2-cyanopyrazines, and their derivatives

AUTHOR(S): Karmas, George; Spoerri, Paul E.

CORPORATE SOURCE: Polytech. Inst. of Brooklyn, Brooklyn, NY

SOURCE: Journal of the American Chemical Society (1956), 78, 2141-4

CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB DL-Phenylglycine anhydride (41.5 g.) and 120 cc. PBr₃ refluxed 5 hrs., cooled to 25°, and filtered through a sintered glass funnel, the residue washed with 20 cc. PBr₃, the filtrate poured cautiously onto 2 kg. crushed ice, made strongly basic with 50% aqueous NaOH, and extracted at 35-40° with two 400-cc. portions CHCl₃, the aqueous layer acidified and filtered to give 6.0 g. product, the CHCl₃ extract evaporated, the residual crude 2-bromo-3,6-diphenylpyrazine added to 10.0 g. Na in 350 cc. MeOH, the mixture refluxed 4 hrs., concentrated to 200 cc., and poured into 2 l. H₂O, the brown solid precipitate filtered off, dried in air, refluxed 10 hrs. with 300 cc. 48% HBr and 100 cc. AcOH, and poured into 2 l. H₂O, and the precipitate washed with 5% aqueous NaHCO₃ and H₂O, dried in air, combined with the product isolated earlier, dissolved in 350 cc. hot pyridine, filtered hot with Super Cel, and cooled slowly to 0° gave 21.3 g. 2-hydroxy-3,6-diphenylpyrazine (I), small yellow granules, m. 292-3°. I (10.0 g.) in 1 l. warm (65°) 1% aqueous NaOH treated with stirring with a solution of PhN₂Cl from 6.0 g. PhNH₂, and 12 cc. 12N HCl in 70 cc. H₂O and 4.6 g. NaNO₂ in 10 cc. H₂O, the resulting gel kept 0.5 hr. at 0°, 1 hr. at 20°, treated with stirring with 40 cc. 12N HCl, and filtered, and the residue dried in air gave 10.5 g. 2-hydroxy-3,5,6-triphenylpyrazine, small yellow prisms, m. 279-81° (from AcOH). PBr₃ (12.0 cc.), 6.2 cc. Br, and 5.7 g. P₂O₅ refluxed in 30 cc. POCl₃, more of the PBr₃, Br, and P₂O₅ added in the same quantities to the solution, the mixture refluxed again until the P₂O₅ had dissolved, this addition of the reactants continued until the final mixture totalled about 1200 g., and the mixture distilled yielded 70-80% POBr₃, b. 185-93°. The appropriate hydroxypyrazine (II) (0.20 mole) added with stirring to 20 cc. PBr₃ in 40 cc. POBr₃, the mixture heated with slow stirring for a certain time, the pasty reaction mixture cooled to 25° and cautiously poured onto 750 g. ice layered with 200 cc. Et₂O, the hydrolysis mixture made alkaline with 28% NH₄OH and filtered with 10 g. Super-Cel, the aqueous phase of the filtrate extracted with 100 cc. Et₂O, and the combined Et₂O solns. worked up gave the corresponding 2-bromopyrazine (III); method A. The II (0.20

mole) added with slow stirring to 45 cc. POBr₃ at 50°, the mixture heated with stirring, cooled, and hydrolyzed cautiously, and the product isolated in the usual manner gave the III; method B. The II (0.10 mole) and 35 cc. PBr₃ refluxed for a certain time, cooled, poured onto 500 g. ice, and extracted with CHCl₃, the extract washed with 100 cc. 2% aqueous NaOH, dried, and evaporated to dryness, and the residue recrystd. from EtOH yielded the III; method C. The following substituted III were prepared by one of the methods (3-, 5-, and 6-substituents, reaction time, reaction temperature, method, % yield, b.p./mm. or m.p., and n_D25 given): H, H, H (IV), 10 min., 50°, A, 58, 57-8°/9, 1.5814; Me, H, H, 1 hr., 120°, B, 61, 105-7°/50, 1.5667; Et, H, H, 1 hr., 125°, B, 22, 85-7°/14, 1.5553; Pr, H, H, 0.5 hr., 125°, A, 38, 101-2°/14, 1.5456; Ph, H, H, 4 hrs., reflux, C, 42, 110-15°/0.5, - (m. 90-5°); Me, Me, H, 10 min., 145°, B, 53, 91-2°/14, 1.5594; Me, Me, Me, 15 min., reflux, C, 41, 105-10°/20, - (m. 53-4°); H, Me, Me, 20 min., reflux, C, 14, 94-6°/14, 1.5606; H, Ph, Ph, 20 min., reflux, C, 63, 149-50°, -; Me, Ph, Ph, 0.5 hr., reflux, C, 48, 155-6°, -; Et, Ph, Ph, 1 hr., reflux, C, 48, 99-100°, -; Pr, Ph, Ph, 3 hrs., reflux, C, 82, 135-40°/0.001, -; iso-Pr, Ph, Ph, 3 hrs., reflux, C, 62, 118-19°, -; Ph, H, Ph, 16 hrs., reflux, C, 52, 119-20°, -; Ph, Ph, Ph, 30 hrs., reflux, C, 50, 178-80°, -. IV (14.0 g.) and 14.0 g. CuCN in 40 cc. dry pyridine refluxed 3 hrs., poured with stirring into 300 cc. ice cold 6N HCl layered with 150 cc. Et₂O, the mixture stirred 10 min., diluted with 1 l. cold H₂O, and filtered, the residual brown solid washed with 150 cc. Et₂O, the aqueous portion of the filtrate further extracted with three 100-cc. portions Et₂O, and the combined, dried Et₂O solns. worked up gave 2.7 g. 2-cyanopyrazine, b₁₀₀ 116-17°, n_D20 1.5342. The appropriate III and 15 g. CuCN in 40 cc. dry 4-picoline refluxed 3 hrs. and poured hot with stirring into 400 cc. ice cold 4N HCl and 100 cc. CHCl₃, the mixture stirred 0.5 hr. and filtered, the aqueous

portion

of the filtrate extracted with 100 cc. CHCl₃, and the combined, dried CHCl₃ solns. worked up gave the corresponding substituted 2-cyanopyrazines (3-, 5-, and 6-substituents, % yield, b.p./mm. or m.p., and n_D20 given): Me, H, H, 78, 125-6°/50, 1.5278; Et, H, H, 82, 102-3°/15, 1.5206; Pr, H, H, 82, 112-13°/15, 1.5136; Me, Me, H, 75, 113-15°/20, 1.5273; H, Me, Me, 80, 119-20°/17, - (m. 29-30°); Me, Me, Me (V), 90, 120-1°/17, - (m. 68-9°); Ph, H, H, 90, 117-18°/0.2, - (m. 77-8°); H, Ph, Ph (VI), 96, 153-4° (from heptane), -; Me, Ph, Ph, 97, 173-4° (from heptane), -; Ph, Ph, Ph, 97 (10 hrs. reflux), 225-6° (from PhMe), -. The appropriate 2-cyanopyrazine (0.05 mole) in 25 cc. concentrated H₂SO₄ heated 3 hrs. at 120-5° and poured onto 400 g. ice, the solution basified with 50% aqueous NaOH and extracted with CHCl₃, and the extract worked up gave the corresponding substituted 2-carboxamidopyrazines (substituents, % yield, and m.p. given): 3-Me, 17, 164-5° (from Me₂CO); 3-Et, 35, 119-20° (from Me₂CO); 3-Pr, 60, 98-9° (from Et₂O); 3-Ph, 70, 171-2° (from CHCl₃); 3,5,6-tri-Me, 44, 165-6° (from Me₂CO). VI (4.3 g.) in 200 cc. dry C₆H₆ stirred at 25° with 7.0 cc. 4.0M MeMgBr in Et₂O, refluxed 1 hr., cooled to 10°, treated with 50 cc. 6N HCl, refluxed 1 hr. with stirring, and diluted with 200 cc. C₆H₆, the C₆H₆ solution evaporated, and the solid residue recrystd. from 20 cc. Me₂CO

gave

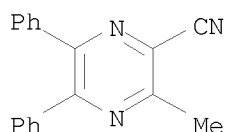
3.5 g. 2-acetyl-5,6-diphenylpyrazine, small golden flakes, m. 152-3°. V (5.0 g.) gave similarly with 13.0 cc. 4.0M MeMgBr 2.5 g. 2-acetyl-3,5,6-trimethylpyrazine, soft white flakes, b₁₄ 113-14°, m. 61-2°. V (2.0 g.) in 5 cc. absolute EtOH and 15 cc. dioxane saturated at 0° with HCl, kept 3 days at 25°, and filtered, the residue washed with Et₂O and added with stirring to 100 cc. alc. NH₄OH (saturated) at 0°, the mixture kept 3 days at 25° and filtered, the filtrate evaporated to dryness in vacuo, the solid residue dissolved in 10

cc. warm absolute EtOH, the solution diluted with 20 cc. Me₂CO and filtered after 10 min., and the filtrate concentrated to 6 cc., diluted with 25 cc. Me₂CO, and kept at 0° gave 2.0 g. 2-amidino-3,5,6-trimethylpyrazine HCl salt, hard, cream-colored granules, m. 170-1°. VI (2.0 g.) and 2.4 g. dry NH₄SCN stirred 45 min. at 180°, cooled, leached with 100 cc. boiling H₂O, and decanted from the tar, the tar leached with two 80-cc. portions boiling 1% HCl, the combined acid exts. basified with aqueous NaOH, chilled, and filtered, and the residue boiled with 70 cc. 1% HCl, filtered, and cooled deposited 50 mg. 2-amidino-5,6-diphenylpyrazine HCl salt, m. 260-5° (decomposition).

IT 124629-61-4P, Pyrazinonitrile, 3-methyl-5,6-diphenyl-
 RL: PREP (Preparation)
 (preparation of)

RN 124629-61-4 CAPLUS

CN Pyrazinecarbonitrile, 3-methyl-5,6-diphenyl- (9CI) (CA INDEX NAME)



L4 ANSWER 141 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1956:12389 CAPLUS

DOCUMENT NUMBER: 50:12389

ORIGINAL REFERENCE NO.: 50:2607b-i

TITLE: Pteridine derivatives. I. Synthesis of 2-amino-4-hydroxypteridines

AUTHOR(S): Dick, G. P. G.; Wood, H. C. S.

CORPORATE SOURCE: Roy. Tech. Coll., Glasgow, UK

SOURCE: Journal of the Chemical Society (1955) 1379-82
 CODEN: JC SOA9; ISSN: 0368-1769

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB Methylglyoxal (I) was treated with H₂NCH(CONH₂)₂ (II) by the method of Jones (C.A. 43, 3009e), the yellow Na salt was separated after 2 days standing at 0°, and acidified to give 13 g. 2-hydroxy-6-methyl-3-pyrazinecarboxamide (III), yellow needles, m. 219-20° (decomposition) (from MeOH). I (12 g.) in H₂O was left 0.5 hr. at room temperature with 10 g. NaHSO₃, then heated with 20 g. II to yield 70% III. 2-Hydroxy-3-pyrazinecarboxamide (1 g.) and 1 g. NaOH in EtOH were heated 6 hrs. at 170° in a bomb to yield 0.61 g. 2-aminopyrazine-3-carboxylic acid, m. 218-19° (decomposition). Similar hydrolysis of the diphenyl amide gave 91% 2-hydroxy-5,6-diphenyl-3-pyrazinecarboxylic acid (IV), needles, m. 216-17° (decomposition) (from aqueous Me₂CO). The III Na salt (3 g.) in 20 cc. 5N NaOH was refluxed 30 hrs., the solution treated with HCl to a pH 4-5, treated with C, and concentrated to give 1.3 g. 2-hydroxy-6-methylpyrazine-3-carboxylic acid (V), needles, m. 188-9° (decomposition). IV (7.5 g.) in boiling MeOH was treated for 20 min. with dry HCl, then refluxed 2 hrs. to give 6.65 g. 2-hydroxy-3-methoxycarbonyl-5,6-diphenylpyrazine (VI), yellow needles, m. 204-5°. V was similarly esterified to give 100% Me ester (VII), needles, m. 174-5° (decomposition). VII with POCl₃ gave 2-chloro-3-methoxycarbonylpyrazine (VIII). VI (3.5 g.) and 23 g. POCl₃ containing 1 drop concentrated H₂SO₄ were heated in a Carius tube for 10 min. at 110°, the tube sealed and heated 5.5 hrs. at 160° to give 3

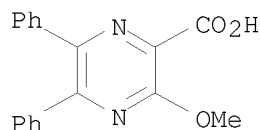
g. (81%) 2-chloro-3-methoxycarbonyl-5,6-diphenylpyrazine (IX), small plates, m. 116-16.5° (from MeOH-light petroleum followed by sublimation); the yield at 150° was 50% and at 190° 14%; the use of POCl₃PhNEt₂ or POCl₃-PCl₅ was unsuccessful. VII (0.3 g.) similarly refluxed 5 hrs. with POCl₃-H₂SO₄ gave 0.2 g. 2-chloro-3-methoxycarbonyl-6-methylpyrazine (X), plates, m. 84-5° (from light petroleum). VIII (1 g.) heated 0.5 hr. at 170° with 2 g. guanidine carbonate (XI), the residual solid dissolved in hot H₂O, filtered, the filtrate treated with C, filtered, brought to pH 5 with 3N HCl, and the solids collected to give 0.84 g. 2-amino-4-hydroxypteridine (XII), m. above 360°. XII was purified by solution in 2N NaOH, filtered, 10N NaOH added to precipitate the Na

salt, which was collected, washed with 2.5N NaOH, dried, dissolved in hot H₂O, and precipitated with 3N HOAc to give pure XII, yellow. VIII (2 g.) was refluxed 30 hrs. with HN:C(NH₂)₂ in MeOH to give 0.375 g. XII. The yield fell when heated in a sealed tube at higher temperature or when the reflux period was reduced. IX (0.2 g.) and 0.4 g. XI were fused and the crude product similarly purified to yield 0.13 g. 2-amino-4-hydroxy-6,7-diphenylpteridine (XIII), m. above 360°. XIII when crystallized from HCONMe₂ gave a yellow solid. X (0.135 g.) similarly treated with 0.4 g. XI gave 0.105 g. 2-amino-4-hydroxy-7-methylpteridine (XIV), m. above 360°, purified via its Na salt. Authentic XIV was prepared from 2,4,6-triamino-6-hydroxypyrimidine. IX (0.2 g.) and 0.06 g. HN:C(NH₂)₂.HCl were refluxed 12 hrs. with 0.06 g. Na in 7 cc. dry MeOH to yield 73% 2-methoxy-5,6-diphenylpyrazine-3-carboxylic acid (XV), small white needles, m. 180-1° (decomposition) (from aqueous MeOH); Na salt, white plates, m. 254-6° (decomposition) (from H₂O). XV was obtained from NaOMe and IX in the absence of HN:C(NH₂)₂. XV (0.2 g.) was esterified with MeOH-dry HCl to give 0.2 g. 2-methoxy-3-methoxy-carbonyl-5,6-diphenylpyrazine, white needles, m. 118.5-19.0°.

IT 34121-80-7, Pyrazinoic acid, 3-methoxy-5,6-diphenyl-
(and derivs.)

RN 34121-80-7 CAPLUS

CN Pyrazinecarboxylic acid, 3-methoxy-5,6-diphenyl- (8CI) (CA INDEX NAME)

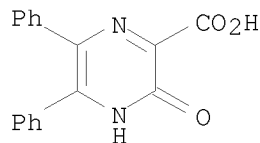


IT 34226-38-5P, Pyrazinoic acid, 3-hydroxy-5,6-diphenyl-
859064-09-8P, Pyrazinoic acid, 3-hydroxy-5,6-diphenyl-, methyl ester

RL: PREP (Preparation)
(preparation of)

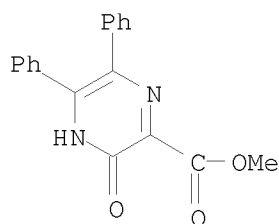
RN 34226-38-5 CAPLUS

CN Pyrazinecarboxylic acid, 3,4-dihydro-3-oxo-5,6-diphenyl- (9CI) (CA INDEX NAME)



RN 859064-09-8 CAPLUS

CN INDEX NAME NOT YET ASSIGNED



L4 ANSWER 142 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1954:903 CAPLUS

DOCUMENT NUMBER: 48:903

ORIGINAL REFERENCE NO.: 48:175e-i,176a-d

TITLE: The preparation of hydroxypyrazines and derived chloropyrazines

AUTHOR(S): Karmas, Geo.; Spoerri, Paul E.

CORPORATE SOURCE: Polytech. Inst. of Brooklyn, Brooklyn, NY

SOURCE: Journal of the American Chemical Society (1952), 74, 1580-4

CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

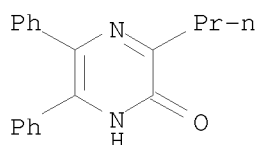
LANGUAGE: Unavailable

GI For diagram(s), see printed CA Issue.

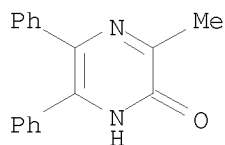
AB Hydroxypyrazines can be synthesized from α -dicarbonyl compds. and hydrohalides of amino acid amides (cf. Jones, C.A. 43, 3009e). α -Bromovaleric and α -bromoisovaleric acids, refluxed 7 hrs. with 50% excess SOCl_2 yielded 75-80% acid chlorides, b60 93-5° and b53 84-5, resp. The acid chlorides added dropwise to 28% NH_4OH at -30° yielded the amides. The starting material added to 28% NH_4OH saturated with NH_3 at 0°, yielded the following α -amino acid amide hydrohalides, starting material, product, % yield, and highest m.p. given: $\text{ClCH}_2\text{CONH}_2$, glycine amide-HCl, 85, 203-5°; $\text{MeCHClCO}_2\text{Et}$, alanine amide-HCl, 60, 172-3°; $\text{MeCHBrCO}_2\text{Et}$, alanine amide-HBr, 85, 156-60°; $\text{EtCHBrCO}_2\text{Et}$, α -aminobutyramide-HBr (I), 90, 190-2°; PrCHBrCONH_2 , norvaline amide-HBr, 76, 218-19°; α -bromoisovaleramide, valine amide-HBr, 70, 233-5°. Condensation of the amides with α -dicarbonyl compds. yielded hydroxypyrazines (R1, R2, R3, % yield, and m.p. given): H, H, H, 51, 188-90°; H, H, Me, 8, 250-1°; H, Me, H, 27, 126-8°; Me, H, H, 85, 151-2°; H, Me, Me, 30, 201-2°; Me, H, Me, 25, 210-11°; Me, Me, H, 70, 146-7°; Me, Me, Me, 70, 204-5°; Et, H, H, 82, 96-7°; Et, Me, H, 32, 99-100°; Et, Me, Me, 60, 149-50°; Pr, H, H, 80, 79-80°; Pr, Me, H, 60, 75-6°; Pr, Me, Me, 64, 119-20°, iso-Pr, H, H, 46, 76-7°; iso-Pr, Me, H, 30, 91-2°; iso-Pr, Me, Me, 23, 144-5°; H, Ph, Ph, 69, 243-4°; Me, Ph, Ph, 47, 213-14°; Et, Ph, Ph, 46, 207-8°; Pr, Ph, Ph, 60, 205-6°; iso-Pr, Ph, Ph, 47, 234-5°. I with methylglyoxal yielded 4% 2-hydroxy-3-ethyl-6-methylpyrazine, m. 181-2°; Ag salt insol. POCl_3 (15 cc.) containing 1 drop H_2SO_4 and 0.04 mole of the hydroxy compound refluxed, cooled, the mixture poured into 200 g. ice and 100 cc. Et_2O , the mixture neutralized with 28% NH_4OH , made strongly alkaline with NaOH and extracted with Et_2O yielded the chloropyrazines. 2-Chloro-5-methylpyrazine (0.3 g.) and 9 cc. 28% NH_4OH heated sealed 20 hrs. at 200°, the solution saturated with NaOH , and extracted with Et_2O yielded 2-amino-5-methylpyrazine, m. 117.5-18°. The 6-Me isomer m. 127-8°. 2-chloropyrazines; R1, R2, R3, % Yield, B.p. °C./mm., M.p.(°C.) or ntD, t °C.; H, H, H, 65,

62-3/31, 1.5342, 25; H, H, Me, 69, 84-5/40, 50-1, ; H, Me, H, 30, 94-6/60, . . . ; Me, H, H, 65, 94-6/65, 1.5302, 25; H, Me, Me, 60, 86-8/20, 1.5290, 23; Me, H, Me, 26, 112-13/70, 1.5243, 26; Me, Me, H, 67, 111-12/70, 1.5230, 24; Me, Me, Me, 75, 100-1/25, 56-7, ; Et, H, H, 75, 110-11/72, 1.5244, 22; Et, Me, H, 32, 93-4/20, 1.5186, 23; Et, Me, Me, 50, 106-7/20, 1.5205, 25; Pr, H, H, 53, 124-5/65, 1.5144, 24; Pr, Me, H, 77, 106-7/20, 1.5130, 22; Pr, Me, Me, 36, 121-2/20, 1.5147, 24; iso-Pr, H, H, 60, 112-13/65, 1.5104, 25; iso-Pr, Me, H, 76, 95-6/18, 1.5092, 25; iso-Pr, Me, Me, 65, 105-6/15, 1.5120, 25; H, Ph, Ph, 70, 140-5/0.001, 126-7, ; Me, Ph, Ph, 84, 140-50/0.001, 136-7, ; Et, Ph, Ph, 85, 145-50/0.001, 77-8, ; Pr, Ph, Ph, 97, 155-60/0.001, . . . ; iso-Pr, Ph, Ph, 75, 155-60/0.001, 96-7

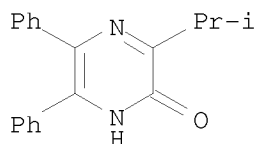
IT 104369-40-6P, Pyrazinol, 5,6-diphenyl-3-propyl-
 108981-53-9P, Pyrazinol, 3-methyl-5,6-diphenyl-
 120106-61-8P, Pyrazinol, 3-isopropyl-5,6-diphenyl-
 RL: PREP (Preparation)
 (preparation of)
 RN 104369-40-6 CAPLUS
 CN 2(1H)-Pyrazinone, 5,6-diphenyl-3-propyl- (CA INDEX NAME)



RN 108981-53-9 CAPLUS
 CN 2(1H)-Pyrazinone, 3-methyl-5,6-diphenyl- (CA INDEX NAME)



RN 120106-61-8 CAPLUS
 CN 2(1H)-Pyrazinone, 3-(1-methylethyl)-5,6-diphenyl- (CA INDEX NAME)



L4 ANSWER 143 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 1949:15234 CAPLUS
 DOCUMENT NUMBER: 43:15234
 ORIGINAL REFERENCE NO.: 43:3009e-i,3010a
 TITLE: Pyrazines and related compounds. I. A new synthesis of hydroxypyrazines
 AUTHOR(S): Jones, Reuben G.
 SOURCE: Journal of the American Chemical Society (1949), 71, 78-81
 CODEN: JACSAT; ISSN: 0002-7863
 DOCUMENT TYPE: Journal

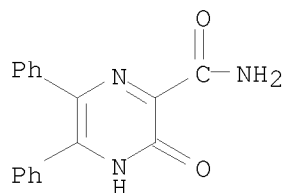
LANGUAGE: Unavailable

AB A general synthesis of 2-hydroxypyrazines (I) involves the condensation of 1,2-di-CO compds. with α -amino acid amides. $\text{H}_2\text{NCH}_2\text{CONH}_2$ and $(\text{CHO})_2$ give 48% I, m. $187-9^\circ$. dl-Methionine Et ester (II) (287 g.) in 2 l. absolute EtOH, saturated at 0° with NH_3 and kept 30 days, gives 175 g. (93% on basis of unrecovered II) dl-methioninamide (III), m. $48-9^\circ$. α -Amino- α -phenylacetamide (IV), m. $128-9^\circ$. $\text{H}_2\text{NCH}(\text{CONH}_2)_2$ (V) (117 g.), added to 25 g. 40% aqueous $(\text{CHO})_2$ diluted with 25 mL. H_2O , the mixture treated (temperature below 10°) with 10 mL. 12.5 N NaOH and, after several hrs., with 10 mL. AcOH, give 90% of the 3-carbamyl derivative of I, m. 265° (decomposition); a higher temperature or less $(\text{CHO})_2$ gives a smaller yield; KOH or Et_2NH can be used in place of NaOH. AcCHO (36 g.) in 50 mL. H_2O at -20° , treated with 60 g. V and then (dropwise, temperature below 0°) with 40 mL. 12.5 N NaOH, kept 18 h. at room temperature, and acidified with 50 mL. 12 N HCl, gives 59% 2-hydroxy-3-carbamyl-5-methylpyrazine (VI), m. $243-4^\circ$ (decomposition); Ac₂ gives 93% of the 5,6-di-Me analog (VII), m. $231-2^\circ$ (decomposition). V (11.7 g.) and 21 g. Bz₂ in 350 mL. 50% aqueous EtOH at 70° , treated with 10 mL. 12.5 N NaOH, give 83% of 2-hydroxy-3-carbamyl-5,6-diphenylpyrazine, m. $174-5^\circ$; 5-Ph analog m. $213-16^\circ$, 75%. 3-Me derivative of I m. $140-2^\circ$, 83.7%; 3,5-di-Me derivative m. $145-6^\circ$, 42% from $\text{MeCH}(\text{NH}_2)\text{CONH}_2$ and AcCHO; 3-methyl-5-Ph derivative m. $212-13^\circ$, 56.5%; 5,6-di-Ph derivative m. $225-7^\circ$, 97%; 5,6-di-Me derivative m. $199-200^\circ$, 11.3%. II and Ac₂ in CHCl_3 containing 1 equivalent piperidine give 70% (NaOH gives 88%) of the 3-(2-methylmercaptoethyl)-5,6-dimethyl derivative of I m. $128-9^\circ$; 3-(2-methylmercaptoethyl) derivative of I m. $96-7^\circ$, 97%. 3-Ph derivative of I m. $172-3^\circ$, 88.5%; 3-phenyl-5,6-dimethyl derivative of I m. $222-6^\circ$, 45%. p-HOC₆H₄CH₂CH(NH₂)CONH₂ and $(\text{CHO})_2$ give 76% of the 3-(p-hydroxybenzyl) derivative of I, m. $212-13^\circ$; AcCHO gives 47% of the 3-(p-hydroxybenzyl)-5-Me derivative, m. $202-3^\circ$; Ac₂ gives 77.5% of the 3-p-hydroxybenzyl-5,6-dimethyl derivative, m. $236-7^\circ$. VII (11.5 g.) in 75 mL. 3 N NaOH, heated several hrs. on the steam bath, gives 79% 2-hydroxy-5,6-dimethyl-3-pyrazinoic acid, m. $172-4^\circ$ (decomposition); VI gives 30% of the 5-Me analog, m. $155-7^\circ$ (decomposition); the 6-Me isomer, tan, m. $183-4^\circ$ (decomposition).

IT 34121-79-4P, Pyrazinamide, 3-hydroxy-5,6-diphenyl-
RL: PREP (Preparation)
(preparation of)

RN 34121-79-4 CAPLUS

CN Pyrazinecarboxamide, 3,4-dihydro-3-oxo-5,6-diphenyl- (9CI) (CA INDEX NAME)



L4 ANSWER 144 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1937:56679 CAPLUS
DOCUMENT NUMBER: 31:56679
ORIGINAL REFERENCE NO.: 31:7848i,7849a-d
TITLE: Hydrogen cyanide. X. The tetrapolymer
AUTHOR(S): Hinkel, L. E.; Richards, G. O.; Thomas, O.
SOURCE: Journal of the Chemical Society (1937) 1432-7
CODEN: JCSOA9; ISSN: 0368-1769

DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

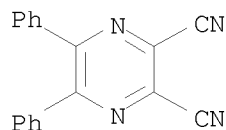
AB cf. C. A. 31, 597.2. The previous evidence for the structure of the polymerized form of HCN is reviewed and further evidence is adduced for its quadrimol. nature. The view that the polymer is diaminomaleic dinitrile is shown to be incorrect and expts. indicate it to be aminoiminosuccinonitrile (I). The polymerization product of HCN, m. 181° (decomposition), condenses with glyoxal in hot H₂O to give 6-hydroxy-2,3-dicyanodihydropyrazine, red, amorphous, decomp. 240° without melting; it is very slowly decomposed by boiling H₂O, but H₂O containing

a little (CO₂H)₂ gives dicyanopyrazine (II), m. 132°. Hydrolysis of II by Na₂O₂ in H₂O and purification through the Ag salt give pyrazinedicarboxylic acid, m. 193°. The polymer of HCN in Et₂O, saturated with dry HCl, gives the HCl salt of I, decomp. 135°. Refluxing the polymer with aldehydes in EtOH for 30 min. gives the following derivs. of I: benzylidene (III), yellow, m. 191° (decomposition); salicylidene, yellow with green tinge, m. 234° (decomposition); m-bromosalicylidene, yellow, m. above 250°; anisylidene, yellow, m. 227° (decomposition); isobutylidene, m. 91° (decomposition); in no case could a 2nd mol. of aldehyde be condensed. The Ac derivative of I m. 164° (decomposition); the di-Ac derivative m. 224° (decomposition); the Ac derivative of III m. 227° (decomposition). Ac₂ and I give 2,3-dicyano-5,6-dimethylpyrazine (IV), m. 171°; benzil forms 2,3-dicyano-5,6-diphenylpyrazine, m. 246°. Hydrolysis of IV gives 2,3-dimethylpyrazine-5,6-dicarboxylic acid, m. 200°. The action of HNO₂ on I yields 4,5-dicyano-1,2,3-triazole (V), hydrolysis of which gives 1,2,3-triazole-4,5-dicarboxylic acid. The action of HNO₂ on the Ac derivative of I forms 4 (or 5)-cyano-1,2,3-triazole-5 (or 4)-carboxamide, m. 219° (decomposition), and V. Oxidation of III gives 4,5-dicyano-2-phenyliminazole, cream, m. 261° (decomposition); hydrolysis gives 2-phenyliminazole-4,5-dicarboxylic acid, m. 243-4°.

IT 52197-23-6P, 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl-
RL: PREP (Preparation)
(preparation of)

RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)



L4 ANSWER 145 OF 145 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1937:44766 CAPLUS

DOCUMENT NUMBER: 31:44766

ORIGINAL REFERENCE NO.: 31:6235c-i,6236a-g

TITLE: Phthalocyanines. IX. Derivatives of thiophene, thionaphthene, pyridine and pyrazine, and a note on the nomenclature

AUTHOR(S): Linstead, R. P.; Noble, E. G.; Wright, J. M.

SOURCE: Journal of the Chemical Society (1937) 911-21

CODEN: JCSOA9; ISSN: 0368-1769

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

OTHER SOURCE(S): CASREACT 31:44766

GI For diagram(s), see printed CA Issue.

AB cf. C. A. 31, 1411.7. This series of studies is concerned with the possibility of obtaining similar compds. from heterocyclic instead of aromatic intermediates and efforts to bridge the gap between phthalocyanines and porphyrins. The name phthalocyanine is well established for compds. of the general type indicated by I; it is proposed to use the term porphyrazine for the central ring system of the phthalocyanine mol., i. e., for the structure represented by II; individual compds. are named by attaching a proper prefix; thus the systematic name for phthalocyanine itself is tetrabenzoporphyrazine and the corresponding compound with 4 C₅H₅N rings in place of 4 C₆H₆ becomes tetrapyridinoporphyrazine. The formation of porphyrazines from heterocyclic compds. may be expected when (i) they contain the arrangement or are capable of yielding this arrangement easily; (ii) when they possess the necessary thermal stability and no disturbing reactive center in the heterocyclic ring; and (iii) when the heterocyclic system is capable of yielding o-5-membered rings. Thus, porphyrazines should be formed in the following series: thiophene (2,3), thionaphthene, pyridine, pyrazine and probably pyridazine; we should not expect to obtain similar products from the corresponding furan or isooxazole derivs. and the pyrrole, pyrrole and isotriazole systems are doubtful. The preparation of α-methylsuccinic acid in 80-5% yields is described and the preparation from this of 3-methyl-thiophene by fusion of the Na salt with P₂S₃ in 18-28% yields; slow initial heating appears to be essential; the 2-Ac derivative results in 75-80% yields (contains a little of the 5-Ac isomer). Oxidation of 35 g. of the 2-Ac derivative with alkaline KMnO₄ yields 12 g. 3-methylthiophene-2-carboxylic acid, 5

g. thiophene-2,3-dicarboxylic acid (III) and 0.8 g. of the 2,4-dicarboxylic acid; various exptl. conditions and corresponding yields are reported. Attempts to prepare III by direct oxidation of thionaphthene were unsuccessful, the product being recovered unchanged or being completely oxidized. Refluxing III with Ac₂O for 30 min. gives the anhydride, m. 140°; the chloride with dry NH₃ in C₆H₆ gives 53% of the diamide, m. 228°, and about 25% of the amic acid (2,3 or 3,2), m. 238°, yielding with P₂O₅ the imide, m. 204°. Dehydration of the amide with P₂O₅ gives 2,3-dicyanothiophene, m. 140°; Ac₂O gives the same product but in smaller yield. Heating the dinitrile with CuCl for 10 min. at 230-50° gives a poor yield (due to loss in crystallization from C₁₀H₄Cl₄) of Cu tetra-2,3-thiophenoporphyrazine, greenish blue powder with faint purple luster; metallic Cu appears to give the same compound, but no pigment was formed with AmONa, litharge or Mg. Attempts to prepare thiophene-3,4-dicarboxylic acid from 3,4-dimethylthiophene and 2,5-dimethylthiophene-3,4-dicarboxylic ester from diacetylsuccinic ester were unsuccessful. Thionaphthenequinone was converted into thionaphthene-2,3-dicarboxylic acid in 75% yields; the acid chloride and NH₃ in C₆H₆ gives about equal quantities of the diamide, m. 204-5°, and of the imide, m. 240°; 2 g. of the amide with Ac₂O gives 1.2 g. of 2,3-dicyanothionaphthene (IV), m. 148°; with Ac₂O-AcOH there resulted 2(or 3)-cyanothionaphthene-3(or 2)-carboxamide, m. 192-4°; this gives a green pigment when heated with CuCl, Cu or Mg. Heating IV with CuCl at 240-50° for 30 min. gives a tetra-2,3-thiophenoporphyrazine, dull green powder, with a faint purple luster; it may contain Cl; the reactions with Al and Mg are also described. Details are given of the preparation of pyridine-2,3-dicarboxylic (quinolinic) acid and of its amide; the latter with Ac₂O and AcOH yields 2 (or 3)-cyanopyridine-3(or 2)-carboxamide, m. 255-60°; with Ac₂O alone, the yield was lower and there also results the Ac derivative (?) of quinolinimide, m. 150°; 2,3-dicyanopyridine, m. 130°, was prepared by passing the amide through a silica gel catalyst at 320-50° in a stream of dry NH₃ gas. Tetra-2,3-pyridinoporphyrazine, blue needles with purple reflex; dimethiodide, greenish blue; Cu derivative, blue; it is soluble in comparatively dilute

H₂SO₄.

2,3-Dicyanopyrazine (V), m. 132°, was prepared from (H₂NCCN)₂ and (CHO)₂; the 5,6-di-Me derivative, light yellow, m. 166°, was prepared from Ac₂; benzil gives the 5,6-di-Ph derivative, m. 245°; phenanthraquinone yields 2,3-dicyanophenan- thra(9',10',5,6)pyrazine, golden, m. 320°. V and CuCl give Cu tetrapyrazinoporphyrazine tetrahydrate((precipitated from H₂SO₄ by ice), blue with purple luster; drying over H₂SO₄ gives the trihydrate; 2 H₂O were lost at 150° and 3 at 200°; the monohydrate forms the trihydrate in the air; the Mg compound, blue on solution in concentrated H₂SO₄ and precipitation with H₂O, yields the free

Porphyrazine, as the tetrahydrate, a blue powder. The derivs. of V yield colored solids with AlCl₃, Cu, CuCl and ZnCl₂, which were not examined in detail.

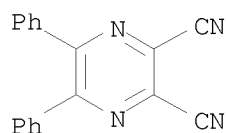
IT 52197-23-6P, 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl-

RL: PREP (Preparation)

(preparation of)

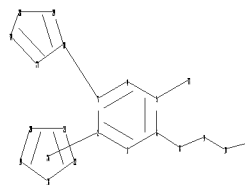
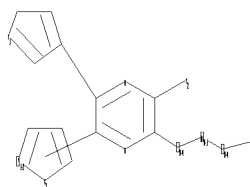
RN 52197-23-6 CAPLUS

CN 2,3-Pyrazinedicarbonitrile, 5,6-diphenyl- (CA INDEX NAME)



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chain nodes :

8 9 10 11 33

ring nodes :

1 2 3 4 5 6 18 19 20 21 22 27 28 29 30 34

chain bonds :
 3-30 5-33 6-8 8-9 9-10 10-11
 ring bonds :
 1-2 1-6 2-3 3-4 4-5 5-6 18-19 18-22 19-20 20-21 21-22 27-30 27-34
 28-29 28-34 29-30
 exact/norm bonds :
 3-30 5-33 6-8 8-9 9-10 10-11 18-19 18-22 19-20 27-30 27-34 28-29 28-34
 29-30
 normalized bonds :
 1-2 1-6 2-3 3-4 4-5 5-6 20-21 21-22
 isolated ring systems :
 containing 1 :

G1:C,S,N

G2:C,O

Match level :
 1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 8:CLASS 9:CLASS 10:CLASS
 11:CLASS 18:Atom 19:Atom 20:Atom 21:Atom 22:Atom 26:Atom 27:Atom 28:Atom
 29:Atom 30:Atom 33:CLASS 34:Atom

L5 STRUCTURE UPLOADED

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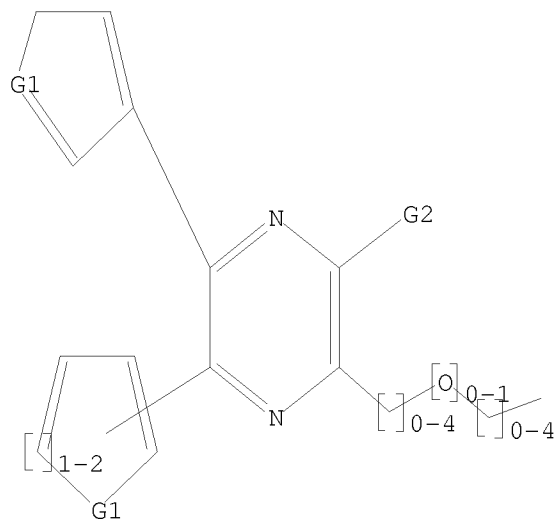
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=> d 15
L5 HAS NO ANSWERS
L5 STR
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G1 C, S, N
G2 C, O
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SAMPLE SEARCH INITIATED 13:17:14 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 1635 TO ITERATE

100.0% PROCESSED 1635 ITERATIONS 0 ANSWERS
SEARCH TIME: 00.00.01
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FULL FILE PROJECTIONS: ONLINE **COMPLETE**
                        BATCH **COMPLETE**
PROJECTED ITERATIONS: 30275 TO 35125
PROJECTED ANSWERS: 0 TO 0
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L6 0 SEA SSS SAM L5
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FULL SCREEN SEARCH COMPLETED - 33092 TO ITERATE
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SEARCH TIME: 00.00.01
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ENTRY	SESSION
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